THE BUILDER

A JOURNAL FOR THE ARCHITECT & CONSTRUCTOR

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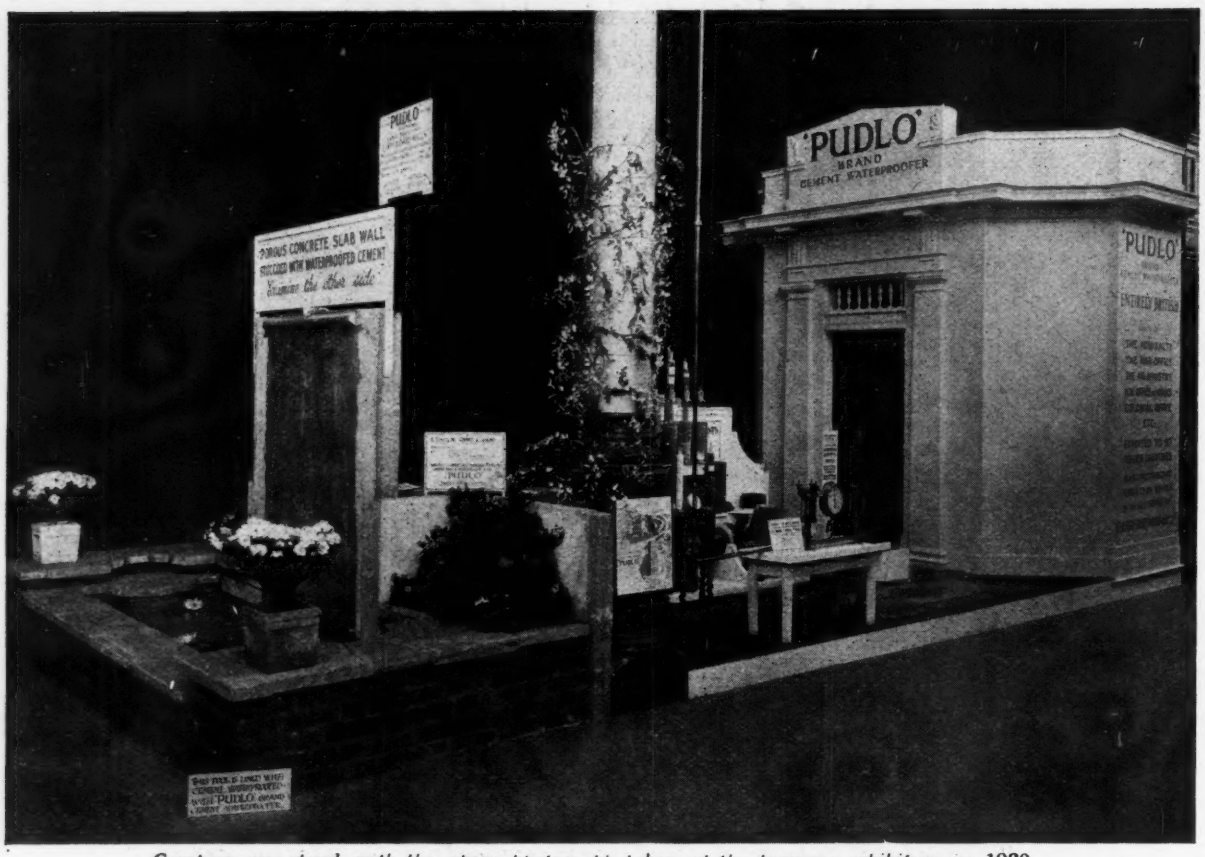
90TH YEAR

THE BUILDING TRADES' EXHIBITION

Being held at Olympia from September 14th to 28th.



Compare our stand with the above photograph taken at the previous exhibition in 1930.

HOW to keep dampness out of a building is a problem that vitally affects every architect and builder. The experience of last winter proved that walls of ordinary thickness have no reserve of resistance to severe rains, even when these walls are built with a cavity. The exhibit shewn above was designed to provide first-hand evidence of the very great margin of safety which is secured when Portland cement, waterproofed with 'PUDLO' Brand waterproofing powder is used for keeping out dampness, or for waterproofing Lily Ponds, Tanks, Swimming Baths and Reservoirs. We shall welcome an opportunity to discuss any particular problem of waterproofing, so that a specification can be submitted which will ensure a completely satisfactory result at the least possible expense. Will you please pay us a visit?

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THE BUILDER
A JOURNAL FOR THE ARCHITECT & CONSTRUCTOR

VOL. CXLIII. SEPTEMBER 16, 1932. No. 4676.

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Beckenham Municipal Offices: The Electrical Department.

MESSRS. LANCHESTER AND LODGE, FF.R.I.B.A., Architects.

MEETINGS

FRIDAY, *September* 16.

Building Trades Exhibition. Judging of students' work. At Olympia.

SATURDAY, *September* 17.

Institution of Municipal and County Engineers. North-Eastern District Meeting to view the Roman Wall, etc., in Northumberland. Assemble near the George Inn, Chollerford. 11 a.m.

Lancashire Guild of Bricklayers, Incorported Clerks of Works Association, and Hull Guild of Building, West Essex Chapter of the Essex, Cambridge and Hertfordshire Society of Architects, and South-Eastern Society of Architects. Visit to Olympia. 4 p.m. Address by Mr. T. P. Bennett, F.R.I.B.A.

MONDAY, *September* 19.

Society of Estate Clerks of Works. Visit to Olympia.

TUESDAY, *September* 20.

Institution of Structural Engineers, London Master Builders' Association, Ceramic Society. Visit to Olympia.

WEDNESDAY, *September* 21.

National Federation of Clay Industries, Ceramic Society, Institute of Clayworkers. Visit to Olympia.

THURSDAY, *September* 22.

Ceramic Society; Ballast, Sand and Allied Trades Association. Visit to Olympia.

FRIDAY, *September* 23.

Olympia. A Ball in aid of the Architect's Unemployment Relief Fund. Tickets (including supper), £1 (three for 45s.), from Mrs. Lanchester, Chairman Social Committee, R.I.B.A.. 9, Conduit-street, W.1.

South-Eastern Society of Architects. Visit to Olympia. 12.30 p.m.

FRIDAY-SUNDAY, *September* 23-25.

National Smoke Abatement Society. Annual Conference. At Newcastle-upon-Tyne.

SATURDAY, *September* 24.

Sheffield and District Clerks of Works, Association of Architects and Technical Assistants, Incorporated British Institute of Certified Carpenters. Visit to Olympia. 4.30 p.m. Address by Mr. H. V. Lanchester, F.R.I.B.A.

MONDAY, *September* 26.

South-Eastern Federation of the Brick Trade. Visit to Olympia. 1 p.m. Address by Mr. Alan E. Munby, M.A., F.R.I.B.A.

FRIDAY AND SATURDAY, *September* 30-*October* 1.

Royal Sanitary Institute. Visit to Portsmouth. Friday: Mr. Joseph Parkin on "Municipal Engineering Works in Portsmouth." At the Guildhall. 4.45 p.m. Saturday: Visits to H.M. Dockyard and to Haslar Hospital. 10 a.m.

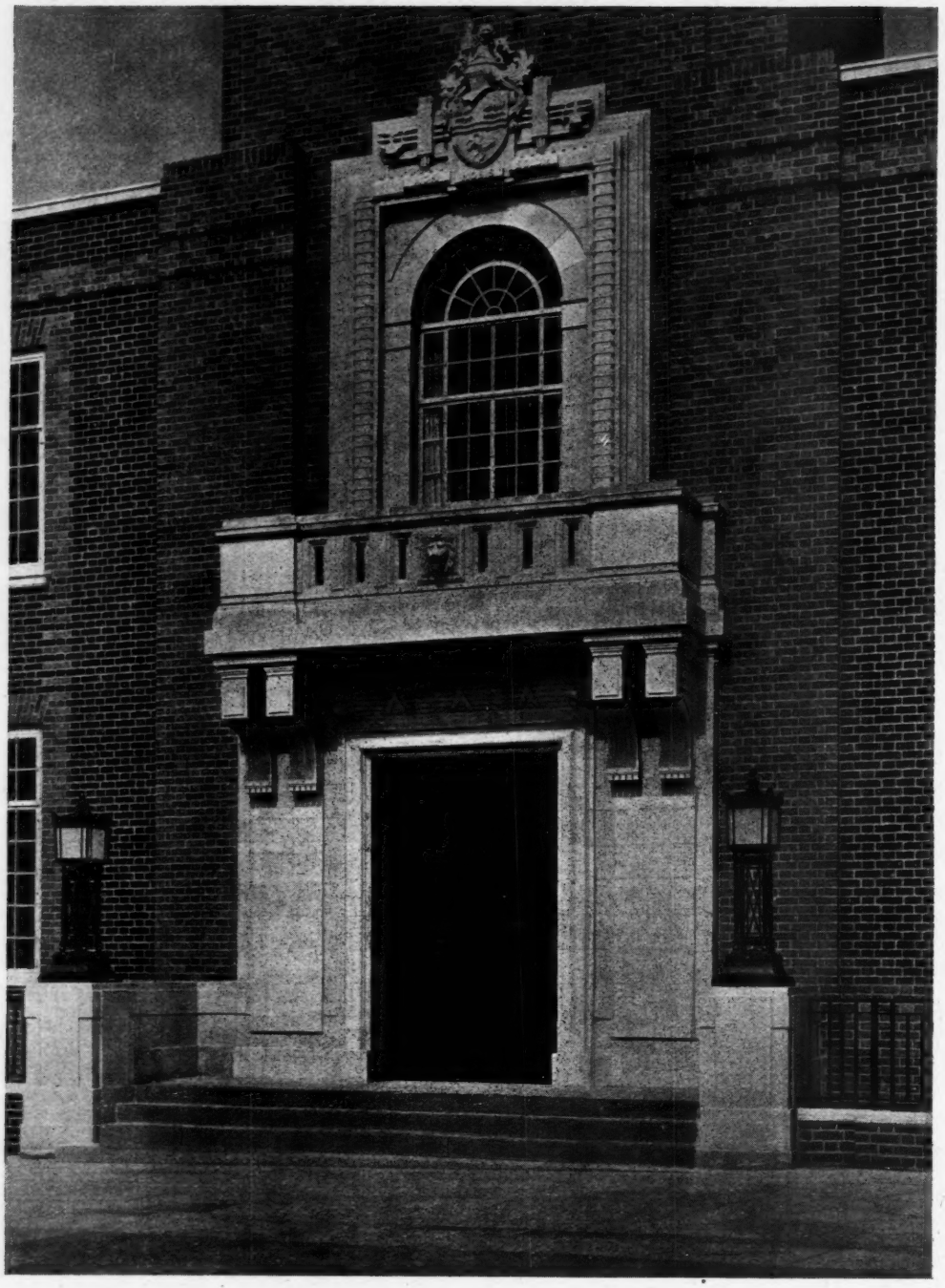
FRIDAY-MONDAY, *September* 30-*October* 3.

Garden Cities and Town Planning Association. Municipal and Social Study Visit to Cardiff.

WEDNESDAY, *October* 5.

Institution of Structural Engineers (*South-Eastern Counties Branch*). Mr. J. A. Jones on "Steel and Concrete."

Institute of Patentees. Opening of the Eighth International Exhibiton of Inventions. By the Rt. Hon. the Lord Mayor of London, Sir Maurice Jenks. At the Central Hall, Westminster, S.W.1.



Beckenham Municipal Offices: Detail of Main Entrance.

MESSRS. LANCHESTER AND LODGE, FF.R.I.B.A., Architects.

SUN TRAPS.

THE report of the R.I.B.A. Joint Committee on the Orientation of Buildings * is now published. Under the chairmanship of Mr. Percy Waldram the Committee has undertaken its task in a thorough and businesslike manner, and the report offers an amount of information which will be helpful to many architects and building committees. In discovering that the sun offers tonic gifts to the body as well as to the spirits, and that a healthy tan stands for something more than an attribute of the handsome man, this generation of science has revealed much of value to the human race. The work of this Committee has been directed to the useful application of this knowledge, in which the planners of buildings find full scope for their ingenuity and grasp of the progressive needs of the times.

The report deals mainly with those elements of planning and fenestration by which a maximum of sunlight is admitted into a building; but it deals also with the quality of the sunlight so admitted; an aspect bearing directly upon the use of special glasses, which will be of interest to the practitioner keen to keep abreast with the times. The use of "ultra violet ray" glass has been the subject of much discussion, and as the production may be said to have hardly emerged from infancy, the findings of the Committee will be read with care. There has been a suspicion abroad that though this glass can be proved scientifically to allow the most health-giving rays of light to pass where ordinary window glass will intercept, that it does, or may, deteriorate with use, and ultimately revert to the consistency and limitations of ordinary glass. We believe that it has been scientifically shown that there is some deterioration with age, but that such deterioration is only partial and that permanent qualities of considerable value remain. Upon this point, however, the report does not throw any light and might be amplified with advantage.

The report does do a great deal, however, to check those over-enthusiastic ideas which some people have entertained that the use of this class of glass introduces health into the building in limitless quantities. It points out how light of all sorts must be reflected by any glass to some extent, and that the ultra-violet rays can only be transmitted direct from the blue sky, and therefore reach but a fraction of the floor areas of a normally lighted room. It therefore urges a reasonable judgment in the use of this material, which is well worth while with large areas of glass lighting considerable floor areas.

The illustrations of hospital ward lighting are particularly interesting in that the great areas of glass indicated must inevitably influence the architectural treatment of this class of building. The scientific data given in graphic form points the finger at a reasonable modern development, and there is no doubt that this opens a field to the modernist who will feel no artificial restrictions in style to prevent his expressing these essentially modern developments in a free and descriptive manner. It is comfortable to feel that there are fields of action of this kind where the modern school may exercise itself without shock to the sense of fitness of more cautious people. The re-spacing of beds longitudinally in the wards between wing screens is also interesting, and an advance in planning definitely of the most recent invention. These notes upon hospital design are a definite contribution to contemporary knowledge.

In the matter of school planning, the Report breaks less fresh ground, for the types and lay-outs have been well considered in previous research. Brought in line with the central idea of the report, they are, however, usefully marshalled. Bearing upon more general types of building, the Report preserves an admirable balance between an obsession for an idea, and the pressing subsidiary problems which must always temper an obsession if it is to become a useful enthusiasm. It is rightly pointed out that in this country the sun and the southerly gales come from the same quarter, and that the blessing of the summer may become the curse of the winter; and it is clear that the English architect must preserve his balance when providing for the comfort of an all-season home such as the average Englishman requires. The home that is a home must offer health to its occupants; but that health does not derive from a single source. Sunlight is truly a most valuable tonic and restorer of tired tissues, but the human body is a complex machine which derives efficiency from many other sources. Chief of its component parts is, perhaps, the nervous system, and most difficult to serve and keep in tune. Convenience, peace and comfort; temperate warmth or coolness as required; pleasant views from all parts of the compass where they may occur; these are essential factors which promote normal nervous condition without which bodily health is impossible. The designer who thinks of nothing but light is, therefore, touching but the fringe of his problem, and his enthusiasm may lead him to take with one hand what he has given with the other.

That is a point for those who have imagined that the modern home must be expressed as a mongrel born of the greenhouse and the hospital; and is an encouragement to those who seek, in expressing a home, all those qualities which have stood typical of comfortable home life in England, with the just observance of health and sanitation added to it all. Modern science has told us much that is useful but has neither succeeded in causing, nor perhaps professed to cause, a revolution in traditional living. These are points which the framers of the report have evidently borne fully in mind.

Of further interest are the notes upon apparatus used for measuring comparative lighting values; especially the apparatus invented by the chairman of the Committee. Such mechanical aids to judgment not only offer a means of building up data for such research as this Committee undertook, but have a very practical use in the assessment of damages for right of light cases. We have before us no records of such measurements being accepted as final evidence in a court of law, but we know such information has been given in evidence and has no doubt assisted judgment.

Finally, cordial congratulations are due to the Committee which has offered its services in this very useful piece of technical research. We trust that the publication of the Report will be made readily accessible to all those who study the science of building, and that it will be read in the future as a work of reference and not laid aside after the freshness of its appearance has worn off. We are sure that the well-chosen members of this Committee will feel their labours have been well rewarded if the matter they have collected continues to serve the planners of buildings of the future.

* Report of the R.I.B.A. Committee on the Orientation of Buildings. R.I.B.A. *Journal*, September 10.

NOTES

The Building Trades Exhibition.

THE interest of architects is largely concentrated on the Building Exhibition which, as it comes before us again this year, promises to supply ever-increasing matter for attention. It may even be looked upon as one of the architect's obligations, and an agreeable one, too, that he shall pass in review all that every one of these exhibitions shows of the enterprise devoted to the building trades. Various additional attractions will be found this year, including a Ball, which, through the generosity of Mr. Montgomery, will, we hope, add very materially to the present funds of assistance for our hardly-pressed architects. What we must all hope is that the Conference just held at the Institute will enlighten our authorities as to the wisdom of setting free the building trade from economies in expenditure, which are far from constituting a far-sighted policy. The influence of the building industry on employment is indicated by the activities shown in this Building Trades Exhibition. If we only show a reasonable confidence in the enterprise of the building trades, we should surely see a definite improvement in employment.

A National Council for the Building Industry.

AT a conference presided over by Sir Raymond Unwin, P.R.I.B.A., held at the Royal Institute of British Architects, and attended by representatives of every section of the building industry, a draft constitution for a National Council for the Building Industry was submitted, and it was unanimously resolved to recommend it for acceptance by the several organisations represented. It was decided that the Council should be named "The Building Industries National Council," and its objects will be to co-ordinate and to give expression to the collective views of the national organisations concerned in and connected with the building and constructional group of industries on subjects recognised as affecting the industry as a whole. The conference expressed its grave concern at the almost complete cessation of work throughout the industry which occupies a key position in the economic life of the nation and involves not only the normal employment of upwards of two million operatives, but a great number of professional and technical workers whose livelihood is entirely dependent on building. The curtailment of building work is so far-reaching in its effects as to put out of commission some 350,000 operatives, as well as a vast aggregate of allied manufacturers engaged in the supply of building components. This is the first industry in the country on its own volition to set up a national organisation, which in the future it is confidently believed will pursue a vigorous and economic policy in the public interest and will, moreover, establish a sound basis for co-operation within the industry. The opinion was expressed by the conference that the revival of activity in the building industry would provide an immediate and material contribution to the rehabilitation of national prosperity.

The Pilgrim Trust Gifts.

THE generosity of the Pilgrim Trust will be very widely appreciated in this country. The proper housing and reference of the invaluable muniments in Westminster Abbey is the latest benefaction of the Trust. The result is referred to as follows by the Dean: "The plans have been in the hands of Mr. Walter Tapper, A.R.A., the Abbey Surveyor, and, briefly, he has found it possible to connect the existing muniment room with the beautiful seventeenth-century library in the east cloister (once the dormitory of the monks), which at present is but little used. It need hardly be said that the plan has been worked out by Mr. Tapper with the utmost appreciation of the beauties both of the muniment room and the library, and that he has taken the greatest care that the necessary structural alterations shall cause the least possible disturbance of mediæval work."

Alterations at the Abbey.

THE Dean further explains: "When the Abbey church was rebuilt in the thirteenth century it was not possible to form a west aisle to the south transept, for the space was occupied by the east cloister outside. But by taking the roof of the cloister into the church and making a gallery upon it, it was possible to form a kind of upper west aisle between the floor of the church and the triforium. It is this 'gallery' which has been the muniment room, certainly since the fourteenth century. It is not proposed to touch the muniment room, except for cleaning the stonework, or its

Estate Development from Architects' Designs.

(*See page* 442.)

contents. It is in many ways admirably adapted for the housing of manuscripts. It is absolutely damp-proof, there is plenty of air, and the risk of fire is minimised by its being entirely of stone. The cases containing the manuscripts, however, will be rearranged. At the south end of the muniment room a door gives access to the roof of the cloister. This roof has above it a loft with a low pitched roof of pleasant red tiles. By raising this tiled roof by one foot Mr. Tapper has been able to plan a charming gallery stretching the length of the cloister, and this will afford much-needed space for extra cases, books, etc. It will be lighted from above and by two dormer windows. Seen from the cloister the alteration in the pitch of the roof will be scarcely if at all perceptible. The east wall of this gallery is the perfectly plain west wall of the library. A doorway is being cut through this wall and from it a circular oak staircase will descend to the floor of the library. Mr. Tapper has designed this staircase to be in keeping with the seventeenth-century fittings of the library. The charming bookcases in the library will not be touched, but some of the later nineteenth-century additions will be rearranged and accommodation for students will be provided."

Stone Building in Edinburgh.

We can sympathise with the deputation which waited on the Edinburgh Corporation this week urging the adoption of stone frontages for some considerable portion of housing work in Edinburgh. Both for its appearance sake and durability there is much to be said for this if it is treated with simplicity and has good proportions. The nightmares of Continental design will surely not find much foothold in Edinburgh, for within the limits of architectural breadth and dignity it is always possible for a good designer to give some interest and distinction to his work.

Liverpool Cathedral.

The architectural triumph of our time is the great Anglican Cathedral at Liverpool, and if its ultimate cost is about two million pounds we must realise that this is only about the equivalent relative cost of Salisbury Cathedral. Moreover, we may fairly claim that in dignity and worshipfulness of feeling it will compare favourably with any of our old cathedrals. This is a great tribute to those who have followed the initiative of Bishop Chavasse and carried out about a million pounds' worth of notable building during all the difficulties of our time, including the Great War, and it is a striking tribute to the value of youth that a young man of about 21 can initiate such a design and carry it forward with a fair prospect of realising at least a large portion of the complete work. We shall all hope that Sir Giles Scott will have the good fortune to see the completion of his masterpiece, as did his great predecessor, Sir Christopher Wren. We need not consider this impossible, for the official record says that "from a purely constructional point of view it should be possible to complete the cathedral in twenty years from the present time."

The Cathedral Handbook.

We have read with great interest the corrected account of this cathedral enterprise in the official handbook, the latest edition of which has just been issued, and we feel sure it will be of lasting interest to our architects. It is admirably compiled and affords a graphic illustration of work which has been carried on for thirty years past. It is a great tribute to Liverpool's public-spirited citizens and the wisdom and skill which have gone to the expenditure of this large sum of public money.

A Pastel Exhibition.

Those who have not yet availed themselves of the opportunity announced in a recent issue of seeing the interesting little exhibition of Mr. T. Raffles Davison's pastels at No. 9, Conduit-street, W.1, should do so at once, as the exhibition closes on Saturday. This is Mr. Davison's third exhibition, and the work exhibited is some of his best. No matter what the subject, be it architecture, landscape or seascape, the artist grasps the essentials in these little sketches. All unnecessary detail is omitted, while the impression of vast expanse of country, it may be . r the drawing of an old church tower, or some old-world farmhouse nestling amidst the landscape, or some rocky seashore is conveyed to one's mind in a satisfying manner. The sketches are not "slick" drawings which excite the admiration of many of the younger school, but are poetical little pictures appealing to the connoisseur and those preferring delicacy and refinement to a coarse technique.

Typical "Ribbon" Development.

See page 442.)

GENERAL NEWS

Professional Announcements.

Mr. W. Launcelot Andrews, architect, late of 16, Hammet-street, Taunton, has opened an office at Meare Green, Stoke St. Gregory, near Taunton, and will be pleased to receive trade circulars, etc.

Mr. W. Lynn-Thompson, A.R.I.B.A., of Ilford, has removed to Eastcote, Orpington, Kent, and would be pleased to receive trade catalogues at that address.

Mr. D. Pugh-Jones, F.R.I.B.A., F.S.I., has retired from the service of the Glamorgan County Council, and his address is now 15, Colchester-avenue, Penylan, Cardiff.

An Appointment.

Mr. Leonard Heywood, F.R.I.B.A., deputy director, has been appointed Director of Housing to the Corporation of Manchester, in place of Mr. F. W. Platt, F.S.I., who has retired.

New Keeper Appointed, National Gallery.

The Lords Commissioners of the Treasury have appointed Mr. Edwin Glasgow, an inspector of schools under the Board of Education, to be Keeper of the National Gallery and Secretary and Accounting Officer to the Trustees in succession to Mr. C. H. Collins Baker, who resigns on September 20.

Proposed Court House, Sheffield.

The announcement has been made by Alderman E. G. Rowlinson, leader of the Sheffield City Council, that plans have been prepared for the further development of Waingate and Castle-street, Sheffield, as a shopping centre, the scheme also to include the erection of a new court house in place of the present police court buildings, still known to many as the "Old Town Hall." It is planned to make Sheffield an assize town.

Restoration Work at Lincoln Cathedral.

It is expected that the restoration work at Lincoln Cathedral will be completed in time for the great thanksgiving service on November 3, at which the Duke and Duchess of York will be present. Neglect of repairs in the past has made necessary the present extensive renovations, which have cost nearly £100,000. In 1921, when Mr. Godfrey was examining the North-West tower, he found considerable movement had taken place since his last observation, and the scheme of repair was then launched.

A Tithe Barn, Sussex.

The tithe barn, at Aldwick Bay, Sussex, has now been opened as a club. The ancient building, which has stood on the estate for probably two or three centuries, was reconstructed over 100 years ago. It had, however, become somewhat dilapidated and the timber had been severely ravaged by beetles. This had been thoroughly treated, and new structural work inserted in such a way as not to impair the antiquated aspect of the building. A minstrels' gallery, in keeping with the style of the barn, has been added and a dancing floor laid. New windows with armorial devices of the county and Sussex oak fittings were put in. The new roof is of Norfolk thatch, done by half a dozen thatchers from East Anglia.

R.I.B.A.: District Surveyor and Building Surveyor Examinations.

The R.I.B.A. Statutory Examination for the Office of District Surveyor under the London Building Act, and the Examination for the Office of Building Surveyor under Local Authorities, will be held at the R.I.B.A., London, on October 12, 13 and 14. The closing date for receiving applications for admission to the examinations, accompanied by the fee of £3 3s., is September 21. Full particulars of the examinations and application forms can be obtained from the Secretary, R.I.B.A.

Estates in the Market.

Burstow Hall and The Park Estates, Horley, extending to 104 acres with over 6,425 ft. of main and secondary road frontages, is to be sold in numerous lots by Mr. A. T. Underwood, Estate Office, Three Bridges. The mansion, lodge, two cottages and 13 acres can be purchased at a low figure. Kitsbridge Farm, Copthorne, close to the golf links and five minutes' drive from Three Bridges Station, is also to be sold by Mr. Underwood. Included in the sale is an old-fashioned farmhouse, smallholdings and building sites, in all over 60 acres.

Persian Art Discoveries.

Preliminary reports of finds of the greatest interest and importance by American expeditions working at Damghan are given in a letter to the *Times* by Dr. Arthur Upham Pope—whose work in connection with the Persian Art Exhibition a year or so ago will be remembered by our readers. In one corner of the mound at Tepe Hissar an important structure was found, apparently dating from 2,000 B.C., and actually palatial for its time. This building had been destroyed by fire. Many superb works of art have been found. Perhaps from the artistic point of view one of the most beautiful objects is a copper plate, apparently a lid, on which is shown in low relief a buffalo felled by a lion. The lion's head, which is projected in high relief in the centre, served as a handle. In the main mound, states Dr. Pope, the work has also progressed favourably with most interesting results.

Manchester Society of Architects.

The third of this year's series of summer visits was paid on August 31 to St. Nicholas' Church, Kingsway (architect, Mr. N. F. Cachemaille-Day, A.R.I.B.A.), and to St. Chad's Church, Cheadle (architect, Mr. W. B. Edwards, A.R.I.B.A.). The visit was well attended and the two churches afforded an interesting comparison between the definite modernism of the former and the more traditional detail of the latter. St. Nicholas' Church has an interesting plan, owing to the main entrance being at the east end, which fronts on to the road, and has its semi-circular lady chapel raised high above the altar, and divided from it by a large wrought-iron grille. The exterior is of buff-coloured bricks, and the interior is finished with similar bricks and uncoloured plaster to the walls, with a highly coloured ceiling of insulite The pews are of laminated oak, and the pulpit, lectern, etc., of brick. St. Chad's Roman Catholic Church is also of brick, but in this case multi-coloured sand-faced. The roof is of red pantiles, and the detail is generally Italian in character, with a delightful narthex. The interior is of colour-washed bricks, the apse at the east end only being plastered. The timber king-post trusses are left exposed, and the roof is boarded on the underside, with the timber left in its natural colour. The thanks of the Society are due to the clergy and the architects of the two churches for their kindness in arranging the visits.

Long Melford : The Green and the Church.

(*See facing page*).

"BUILDER" DEBATE

LIV.—LOCAL ARCHITECTS AND HOUSES.

SIR,—I feel that it is not possible to sweep such a question as this into one basket. There are occasions where a client intends to build at a distance, and is sufficiently keenly interested as to desire to be in constant touch with his architect. He will achieve this desirable partnership—which in some cases, if they are rare ones, has brought about the most successful creation of a home—by going to an architect who is more accessible to him than to the building.

Again, do not let us forget the young men who have gone to London for their training, and to whom a small domestic job in the country may mean an opening of the door to practice. These are occasions which count in favour of the negative view.

But, other things being equal, there is no doubt in my mind that "Positive" has proved his case. Architectural practice in the country would, indeed, be impossible if it were not accepted that the capable man on the spot is the man to do the ordinary job.

SPECTATOR.

SIR,—Surely the ethics of practice demand that an architect shall not poach on the ground of a colleague, for nine local jobs out of ten are from people well known to the local architects, and often their previous employers. It seems to me that, whereas the local architect is very scrupulous not to trespass upon his neighbour's legitimate practice, the man from London often steps in without troubling to question the merits of the case. I would suggest that London architects should be more particular in this direction, and that the country architects should not hesitate to stand up for their rights when these are offended.

It is quite obvious that where a well-trained architect has a local practice, he can supervise the work and generally watch his client's interests far more efficiently than can the stranger.

RUS.

COMPETITION NEWS

Proposed Community Hall, West Wickham.

The West Wickham Community Council are to erect a hall, to cost about £3,000. Plans are being prepared by several architects who have been invited to submit designs. The honorary secretary is Mr. Leigh Wainwright, 34, Sherwood-avenue, West Wickham.

CURRENT COMPETITIONS.

	Particulars published in "Builder."	Sending in date.
Open Competition designs for new Hospital Buildings on Woodlands Estate, Scarborough, for Scarborough Hospital and Dispensary. Premiums of £300, £200 and £100. Assessor, Mr. Hubert M. Fairweather, F.R.I.B.A. Designs to the Hospital Hon. Sec., Scarborough ...	March 4	Oct. 1
Town plan for City of Stockholm. 60,000 kr. (approximately £3,000) in prizes, including first prize £1,000 approximately. Assessors include E. G. Asplund, Ragnar Ostberg, and G. L. Pepler. Programme (free), documents (on 40 kr. deposit), from Registrar, Town Planning Office, Stadhuset, Stockholm	May 27	1933 March 1.

Melford Hall: Gatehouse.

The Village Street.

THE VILLAGE LAYOUT

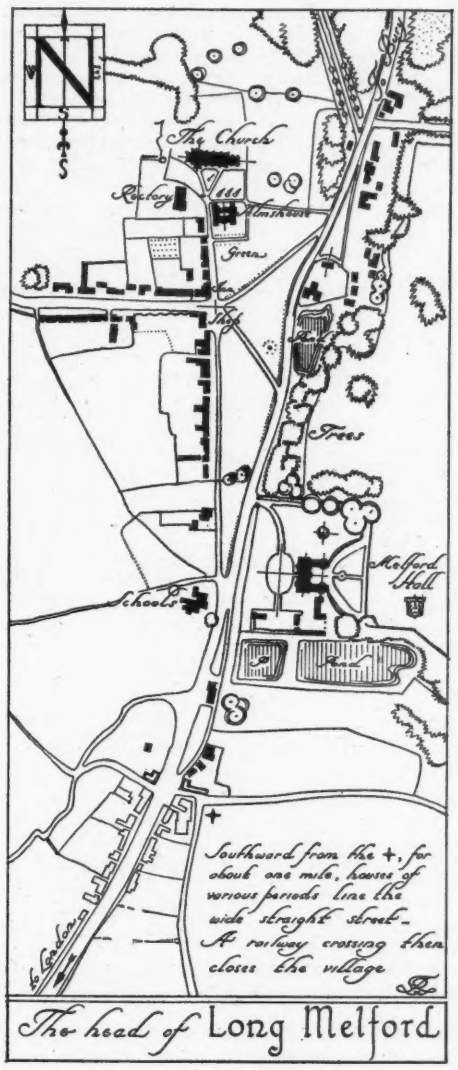
II.—LONG MELFORD, SUFFOLK.

By FRANK BENNETT, A.R.I.B.A.

Long Melford lies twelve miles north-east of Finchingfield and is entered at once over the border of Essex. True to its name, it is long, not merely long and frayed out at the ends like many a village on the traffic ways, but from a humble start broadens into a main street of fine proportion. It runs straight and is bordered by houses standing shoulder to shoulder for nearly half a mile. Then comes a space on one flank announcing the presence of the stately Melford Hall set back within high enclosing walls on the other flank. Like a headpiece, the portion beyond splays out acutely and up to be crowned at the highest point by a square-towered church.

With its comparatively large population, Long Melford might be a town, but for all its length and monumental proportions it clings jealously to its old village character. It exudes the village character unmistakably, with its generous space, clustering cottages—disposed for outlook rather than sunlight—continuous ridge lines and pattern of white walls and dark roofs, all thrown into powerful relief by the dense mass of thick spreading trees. Many people come here just to play on the green for the day, and the beauty of the village is much appreciated. Few other villages can boast the same size, the same complete character and the close presence of so grand a "Hall," which, if not exactly joining in with the life, deposits itself right among the other houses.

The green is large, perhaps even a little overlarge, and well suited to outdoor games. Water flows through the village and widens into pools. A handsome school stands opposite Melford Hall and picks up some of its glory by an imitative style of architecture. The rectory, aloof in its own enclosing gardens, composes with the church and assists to determine the main village axis. The almshouses, erected in the 19th century in the Jacobean manner, and for which the site was unwisely chosen, serve by contrast to show the quality of other dispositions. The almshouses mask the church, which is not only a more beautiful building but also a more honest expression of its time, and they crowd in the one part of the layout which most requires openness. The trees extending thickly beyond Melford Hall on the east border of the green were undoubtedly planted as much for utility as appearance. Growing to a considerable size, they now give protection from northerly winds but disclose the distant view between their striding trunks.



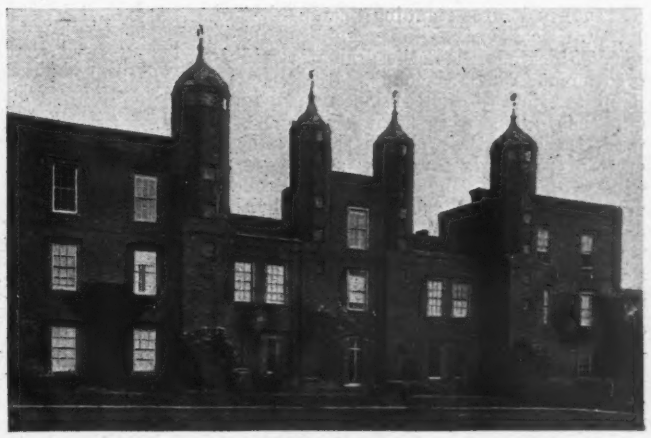
The head of Long Melford

The lower range of houses lining westward along the side street explain the truth of the principle that domestic buildings should never face directly north, even in a village and however good the view.

The green, enclosed by cottages, the church at one end and Melford Hall at the other, may have formed the whole extent of the village at one time. Prosperity served to add the long arm southward. Here gather, like succeeding generations of one family, the high roofs and timbered gables of the 17th century, the urbane red brick fronts of the 18th century, the white brick residences of the early 19th century, the still-born imitations of the late 19th century and the precise post-war houses of the 20th century. The village supports its quota of two inns, the usual equipment of the small country town, one for commercial salesmen and one for private travellers. Notice the joint of the main right-angle road as it drives into the green but splits four ways, slowing the traffic into minor paths. By this dispersion the triangle of green retains its wholeness, the long axis remains unbroken, and traffic flows by natural courses like water finding its own level.

The reason for choosing East Anglia as the ground from which to discover the subjects of these little articles was not an arbitrary one. Essex, Suffolk and Norfolk lie directly in the agricultural belt and, indeed, occupy most of its area. Village life in the true sense ambles on in these counties much as it did all over England before steam power brought its overwhelming changes, bloating sunlit villages out to smoke-reeking towns and swelling gentle market towns into boisterous cities. In few if any parts of the country may one meet with such quick succession of delightful villages, well tended, strongly individual and emanating that true English quality which, like the spirit of Italian gardens, is so difficult to re-capture.

Cottages on the Green.



Melford Hall.

BECKENHAM MUNICIPAL OFFICES

Reviewed by L. W. THORNTON WHITE, A.R.I.B.A.

THE High-street at Beckenham has changed character considerably during the past decade. Its original 18th century work, very happily in scale with the width and length of the twisting street, is rapidly being displaced by the overgrown "18th century" work of the 20th century.

Descending the gentle hill from the station, one is reminded especially of this architectural dilation by the telephone building closing the vista, and by the new banks which, encompassing the crossing of Church-street, sentinel the approach to the new Town Hall. The latter in its main block joins with the church opposite in retaining the old scale, and one is curiously aware that these two buildings, representing the personal requirements and achievements of the township, are much more appreciative of their environment than the banks and business houses serving this community through centralised initiative. Least appreciative of all, ironically enough, are the small houses, whose drab façades, bowed windows, and boundary fences billow about the immediate vicinity of the new building.

The Layout.

It will be remembered that a two-stage competition held in 1927 produced the excellent scheme for these Municipal Buildings which the successful architects, Messrs. Lanchester and Lodge, FF.R.I.B.A., have just carried to completion. The site was a difficult one to treat, and one cannot help recording that its awkwardness for the purpose of civic building could have been greatly minimised had an enlightened town plan controlled the development of the district in its early stages. The building is divided into three main blocks, the electricity department with a frontage to the High-street, the main Town Hall accommodation around a closed court at the back of the site, and a small clinical block adjoining. All three are linked together with directness, and inevitable changes of axis skilfully managed.

The main entrance is down the short hill of Church-avenue, in the centre of an elevation considerably modified from that incorporated in the competition drawings. The baroque extravagance which has encumbered English town hall design for seemingly endless years has been almost discarded at Beckenham, with tremendous gain in dignity. The re-designed tower has contributed more than anything else to this achievement. In the original drawings there was a regrettable battle waging between entrance portico and tower. In the executed work the former has humbly retired and left the latter an easy and commendable victor. Its feet are firmly planted on the ground, from whence it rises visibly and boldly through the two stories of the Town Hall, hesitates a little at the roof line, and continues dramatically upwards to a crown of bejewelled neo-Grec, out of reach of the rising tide of simplicity. Though its height of 100 ft. and average width of 18 ft. are comparatively small dimensions, this tower has all the physical attributes of distinguished forbears, without being too dutifully filial. The renowned free-standing campanili of Italy, Professor Ostberg's magnificent civic tower at Stockholm, and the dramatic exhibition tower at Cologne belong to this ancestry of honest brick escorted by stone enhancement—they all rise immediately from the ground, carry on their simple shafts a focal interest of resplendent window and tower to a climax of contrasting form. The Beckenham tower is of Collier's silver-grey bricks, and has a batter of 4½ in. on each face (a batter which at close range looks considerably more), contrasting with central projections of brickwork, built without the batter.

The Elevations.

The main entrance doorway is linked by a Portland stone treatment into one unit with the semi-circular headed window over. The third dimension of this composition is established by the console-supported stone balcony and freely carved window head, refreshingly devoid of the conventional pediment. There is a fine relationship between the length of offices completing this elevation and the height of the tower. In the competition design three windows on either wing established secondary centre lines which disturbed the main centre of the building. This does not occur in the final work, for there are four windows flanking the tower. A pattern of window and pier is thus arranged which, without keystone-accented centre, leads and leaves the eye to concentrate on the one dominant axis of the elevation. The omission of cornice, too, helps this concentration of interest, for the strength of projecting Portland stone would have sadly interfered with the vertical line of the tower. In place of cornice is a slightly projecting string of four courses of the silver-grey bricks which, with a Portland stone coping of increased size, gives finality to the two stories. Wide pilasters of silver-grey brick, set above a deep plinth of similar material, strengthen the angles of the building, and two courses of the darker Kent stocks, of which the main walls are built, punctuate the heads of the pilasters immediately below the cornice string—a change of tone and colour value adequately performing the work usually done by a change in form, without in any way detracting from the bold simplicity of the building's outline. *Croissant* form windows, generous in size and linked together vertically by dressings of the light-toned bricks, complete the elements which combine in well-considered relationship to produce a fine elevation. The building looks larger than it actually is.

The elevation of the electricity department to the High-street is of different genus. It is frankly a shop with offices above, and as a shop it suffers a little from enclosure within the architectural conventions of civic decorum. There is some indefinable difference between municipal and commercial dignity, elusive enough of expression in structural form individually, but extremely difficult in combination.

The Planning.

One of the most remarkable facts about the new Town Hall is that it has been completed at the exceedingly low figure of 1s. 6d. per foot cube. This is a great achievement, for everything about the plan is well proportioned—the circulations are all adequate, even generously spacious in the civic suite, and no part of the building suffers from a sense of cramping or insufficiency. The main entrance leads through a commemorative vestibule, past a roomy staircase hall, to the main public rating office in the centre of the building. Closely arranged about this are the clerical offices in connection with the treasurer's department. The remainder of the ground floor contains the education and public health departments, approached by secondary entrance in the centre of the west elevation—and a staircase which also leads to the public gallery of the Council Chamber. A depth of but 17 ft. from the window wall has ensured that even the smallest office is well proportioned and is a distinct improvement of the more normal 20 ft. to 24 ft. of office depth. The corridors are all well lighted, which, with a light-toned treatment of decoration, acknowledges and justifies their comparatively narrow width of 5 ft. 6 in. The offices on the main elevation are 18 ft. deep and open on to a main corridor 6 ft. 6 in. wide. In the north-east corner of the ground floor is arranged an electrical repair shop, entered from the yard and with no internal communication with the municipal offices.

Openly planned twin main staircases lead to a first floor landing of monumental proportions, magically included in the low cube figure. This upper hall is treated in a scholarly rendering of the conventional Renaissance Doric order and receives ample light from two large semi-circular headed windows on to areas. There is a small top light too, but this was covered, to the architects' instructions, when I visited the building—fortunately, for I believe that top light in addition to the side light would negative much of the delicate detail work and visibly weaken the substantial roundness of the columns. May the experimental covering of this top light develop into its permanent extinction. To the south of the landing, along the main elevation, are three committee rooms, *en suite*, in which one discovers a root of Beckenham and a key to the architects' success in catching the character of the district. An old rectory of some architectural quality once occupied the site. Two Adam fireplaces of fine detail (one is first rate) and of substantial monetary value, have been preserved from the old building and returned to the site in positions of honour in the committee rooms. They are treated frankly as centres of decorative interest and have suggested the finished treatment of the rooms—deep cream wood and plaster-panelled walls, a lighter cream ceiling and a darker floor and skirting of Austrian oak, waxed English oak doors, furniture upholstered in a French blue, with a similar colour in the curtained hangings to the tall windows.

At the opposite end of the first floor hall a few wide steps rise to an open lobby before the council chamber—an excellent approach lending further importance to the principal room in the building. The council chamber itself, while retaining the general character of that shown on the competition drawings, is considerably modified in detail. Considerations of economy and æsthetics externally and acoustics internally have happily combined to remove the domed roof which disturbed the serenity of the original design. The chairman's dais has been brought forward within the confines of the octagonal plan, and the rectangular adjunct transformed into a chairman's parlour, with access from the side corridor. A similar adjunct opposite holds a well-arranged public gallery for 54 people. The council chamber has a floor area of approximately 1,200 ft. super, and an internal height of 25 ft. At present it accommodates 32 members, 14 officials and Press, in addition to the chairman, and there is convenient area for further seating. Acoustically it should be good, for in its incomplete state, without upholstery and hangings and its quota of human absorbent, audition is promisingly clear in all parts of the room and public gallery. The ceiling and frieze panels are of acoustic plaster, absorbent wall-board lines the back wall of the gallery and dark cork silences the floor. Reflecting and resonant area is accounted for by tall panelling in English oak. French blue is again the predominant colour, in the leather upholstered chairs and seating and in the window hangings. Grouped windows overlooking the grass-sown courtyard, together with smaller openings in the frieze, admit well-distributed daylight. There is no top light. The austerity of the Greek Ionic order, *en grand sérieux*, upholds the morale of council deliberation.

The remainder of the first floor accommodates the town clerk's rooms in the south-west corner, the surveyor's department around the northern end, and members' cloakrooms, refreshment room, etc., along the west side. Spare offices will at some future date link this first floor with that of the electricity department in the High-street block. The latter section of the scheme is given over entirely to electrical service. Its main entrance from the High-street, flanked by large show windows, leads into a spacious showroom hall. At the ends of this one finds small rooms for the display of fittings in domestic surroundings—a kitchen, bathroom, bedroom, drawing-room and dining-room. Large rooms for the demonstration of electric appliances and offices for the sales staff surround the central corridor leading to the municipal offices. An easy staircase, with a well sufficiently large (14 ft. by 8 ft.) to allow its top light to function, combines with a goods lift to

gain the first floor. Here the general offices of the department overlook the High-street and stores and testing rooms the yard. A small second floor contains a staff canteen, spare offices and a caretaker's flat with a convenience of accommodation and openness of outlook which would gladden the heart of any West-End estate agent.

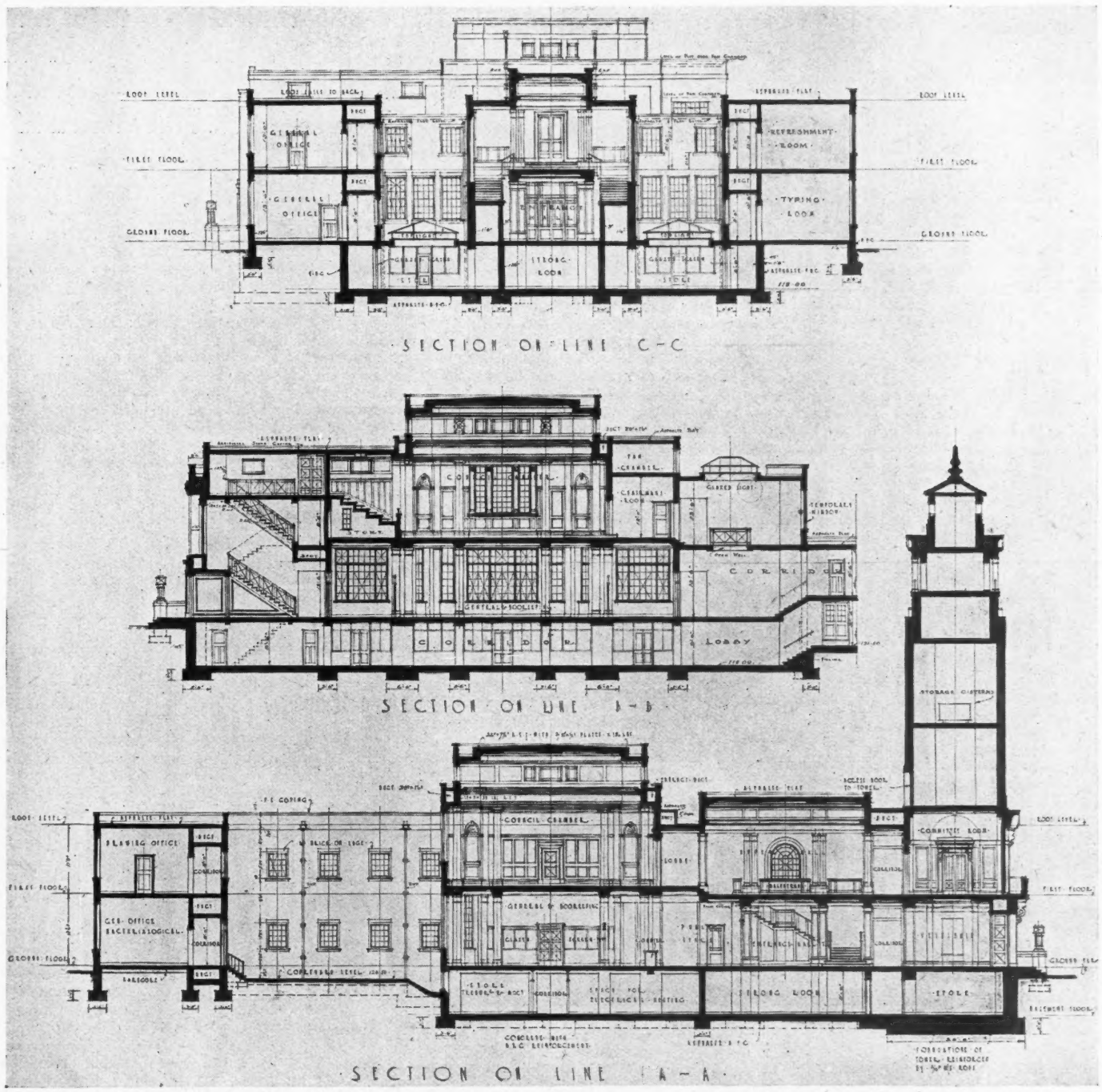
In the north-west corner of the site, planned axially with the western corridor of the main building, is a clinical department. It is symmetrically planned about a large central hall capable of sub-division by a mobile screen. Its 18 ft. ceiling rises above the surrounding rooms and permits of large frieze window area, opening to ensure adequate ventilation without mechanical aid. Ophthalmic, orthopædic and dental clinics open directly from the central hall, and there are rooms for doctor, dental surgeon, nurses, records, weighing, dried milk and general storage, in addition to a mothers' tea room. A covered perambulator park is provided in the sheltered angle between the clinical block and the main building. A garage for six cars, a motor cycle and cycle park, and a mortuary with tree-embowered access roadway, complete the present accommodation.

Materials and Equipment.

The building is not a steel or concrete framed structure. Indeed, it is a notable example of the economical use of brick walling. The outside walls are all the minimum 14 in. thickness required for weather resistance, and in no case, except in isolated piers, has it been necessary to increase the thickness for structural purposes. The tower itself, carried on mass concrete foundations, has walls no thicker than this above roof level, though they would require to be thicker if concrete floors did not buttress them at suitable heights. Light rolled steel stanchions, in the centres of the Ionic columns or piers, carry the roof and floor of the council chamber. No stanchions have been used in the showrooms façade to the High-street. The outside walls are stiffened at suitable intervals by 9 in. cross walls in the usual way, and the corridor walls throughout are 9 in. thick—incidents of structure which give the offices a desirable insulation against noise; indeed, the whole building, unfurnished and untenanted, appeared to be quite free from structure-borne vibration or noise, this in spite of the fact that an army of joiners were hammering away in various parts of the building.

The floors throughout are of the hollow-tile reinforced concrete type spanning from brick wall to brick wall, concrete-encased steel joists being used only in a few positions where they are economically desirable. Herein lies one of the contributory causes of the low cube cost—less encroachment on clear height; unnecessary false ceilings, returns of cornice mouldings, beam plasterwork and anges; decorative area and other economies result. The floors to the entrances, halls, staircases, landings, etc., are all covered with fine terrazzo. Those to the main rooms and corridors have Austrian oak blocks, and there is a really good quality pine block flooring in the general offices. Red pressed tile floors appear in the lavatories. Walls generally are plainly plastered and finished in stippled enamel in corridors and principal rooms, though water paint is used in the secondary rooms.

The heating system throughout the entire building is unusual. Individual panels of direct electric heating units behind large metal cover plates are recessed flush into walls or, less frequently, into ceilings, and thermostats, fixed near the door heads, control the heat of each room. The system is a neat one, for apart from the small thermo-



Beckenham Municipal Offices.

MESSRS. LANCHESTER AND LODGE, FF.R.I.B.A., Architects.

stat, there is nothing to disturb the eye. In the "Adam" committee rooms, the heating units sink naturally into the panelled treatment of the walls. Opening windows (they are of steel in painted wood-frames, and open outward in two casements, without a central mullion) form the principal means of ventilation, though there is an extract installation, with a small grille in the frieze of each room, which keeps the air gently moving and dispenses with the necessity for opening fanlights over the internal doors. The council chamber is treated individually, for in addition to the electrically-heated ceiling panels it enjoys a complete plenum system. The filtering and electrically-heating plant for the air washing is housed in an adjoining chamber and the prepared air makes entry into the council chamber through wall grilles above the tall dado panelling and at skirting level beneath the front of the public gallery; outlets are arranged out of sight behind the projecting cornice.

The omission of a centralised hot-water system is another departure from the usual. In each room requiring hot water, there is a self-contained electric water heater of a size suited to the needs of the room. These heaters are fixed on a side wall, generally above head height, are thermostatically controlled and feed to lavatory basin, sink or bath, through the usual and appropriate water tap. Water service pipes, visible in all cloakrooms, lavatories, etc., are all neatly arranged and painted in distinct and decorative colours—bright blue on the cold, golden yellow on the hot, and green (rather inappropriately!) on the drinking water services. This application of chromatics is worthy of universal adoption and could usefully be extended to embrace all service piping and conduit.

Among the further equipment of this interesting building may be mentioned fire hydrants, synchronised clocks, a vacuum cleaning plant, internal telephones, fitted sun blinds, tubular lighting concealed behind the cornice in the upper hall and in the council chamber, and general lighting pendant fittings which are fresh in appearance without looking as though they would be more appropriate in the local cinema.

* * *

The little hills of Kent may proudly laugh and sing, and architect and client alike rejoice—for Beckenham, enclasping no Magian ring, has shown that excellent building may be achieved at small cube price.

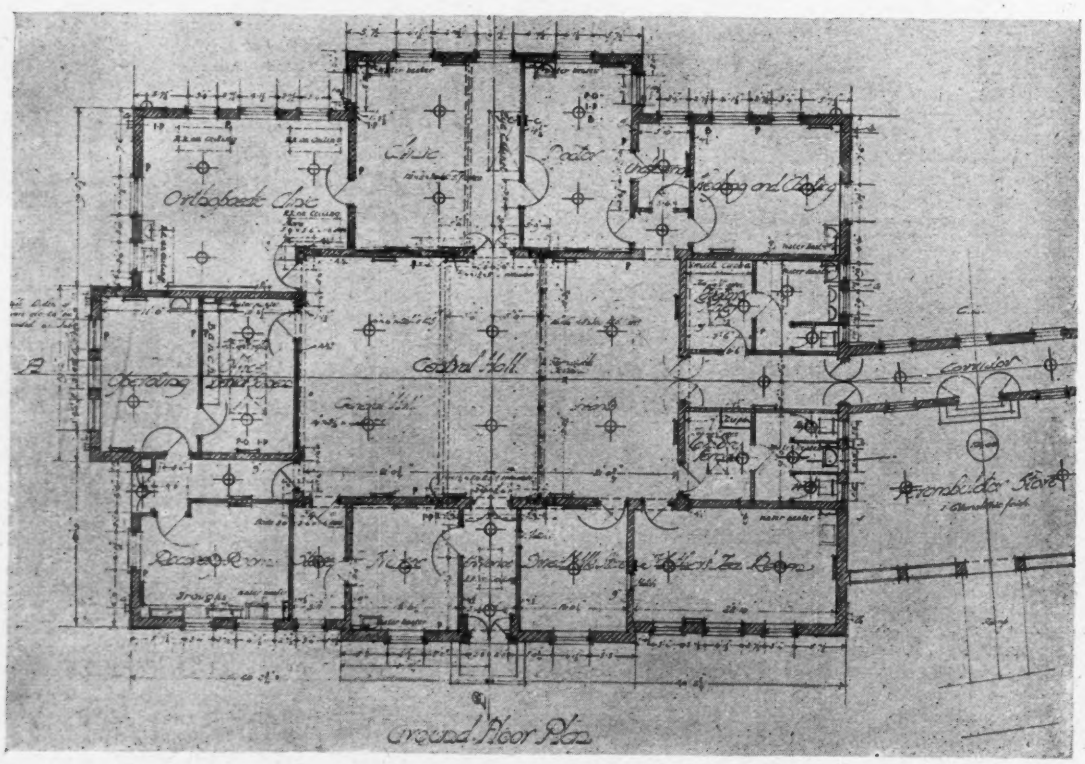
ARCHITECTS AND THE HANDICRAFTS

By A. EDGAR BERESFORD, F.R.I.B.A.

Modern commercial ideals and methods seem to-day to have left no sphere of human activity untouched: no branch of work or play unexploited. The building trade and its ancillary crafts furnish many instances of the gradual reversal of old principles and methods which has resulted from the now almost universal substitution of the criterion of cost for that of quality, and the consequent necessity for accelerating and increasing production. Just as in every other branch of industry the first and often the only aim is to produce at the lowest possible selling price, so in building most other qualities have to take a very subsidiary place in comparison with the question of cost.

It is lamentable that competition is so keen nowadays that it is to be feared much building work is undertaken at a price which the contractor knows must be inadequately remunerative unless some loophole can be found—or made—in the contract. And yet the principle of open competitive tendering seems now to be the accepted form, and its extension on every hand is more and more advocated. The suggestion was recently made, in the correspondence columns of *The Builder*, that architects should be obliged to nominate, not one, but three firms to compete on a price basis for any specialist work included as a provisional amount in a contract, and a subsequent correspondent asked, Why not have unlimited competition for such work? it being indicated that only by such means could an architect free himself from the suspicion of giving an undue preference, if not indeed of being actually bribed in some fashion by his specialist friends. It is illuminative of modern commercial ethics that architects should be thought to have no honest reason for preferring a special craftsman! It should surely be obvious that there may be many other inducements than the hope or prospect of a bribe which may lead an architect to nominate a man or a firm whose work he knows. When we wish to buy a pair of shoes or a suit of clothes we do not as a rule invite tenders from several bootmakers or tailors; we go again to the man whose work we know from past experience has suited our particular—possibly eccentric or unusual—taste or requirements. And the circumstances are exactly similar when considering the selection of the man who is to carve our stone or wood, to model our plaster or lead, or to forge our iron. We nominate a man for such work because we can rely on the quality of the workmanship he will give us, because he knows our little fads and preferences as no stranger could, and we are not very much interested in the possibility of getting something not quite so congenial at a price a few shillings less. The price criterion is by no means the deciding one when choosing artistic craftsmanship, though it may be more important when less individual products are in question. And often the very nature of the work renders it impossible for one to ask with reason for competitive tenders from several different firms or craftsmen. We believe that, even if it be really a fact that architects cannot escape the suspicion of venal motives in nominating one man at an agreed price, they will continue to do so, and justifiably.

To return to our analogy of boots and clothes, we may admit that in this generation the very great majority of us are quite happy and satisfied in selecting from the enormous variety of excellent ready-made shoes which is now available, and many are admirably "suited" over the counter by the unbelievably improved reach-me-down clothing of to-day. Our grandfathers and even our fathers would have been horrified at the idea of having anything which had not been specially made for them, but in their day there was a vast gap, which no longer exists, in quality, style and finish between the two categories. It may be argued, with some degree of truth, that the great majority of the old hand-made things once used in buildings, as a matter of course, have been similarly superseded by modern enterprise, by the ever-increasing development of methods of standardised mechanical production. There can be no doubt, of course, that such methods have in some directions achieved really excellent and successful results—one thinks, for instance, of a modern standardised screw in comparison with an old nail, or of a "Yale" type lock in comparison with the cumbersome old stock lock—but in too many instances invention has concentrated on lowering price



Beckenham Municipal Offices: The Clinic.

Messrs. Lanchester and Lodge, FF.R.I.B.A., Architects.

rather than in improving quality or efficiency, and this is where modern competitive methods, necessarily based on quantity production, are fatal to the old handicrafts. Art cannot be commercialised without ceasing to be art.

Your true craftsman is very rarely what is known as a "good business-man": he is so wholeheartedly devoted to his craft that he has no "business instincts": so long as he has food and shelter and clothing, he cares little for building up a big organisation or making money; an attitude of mind which is regarded with pity or contempt in these days, when "big business" is the universal god. This old type of craftsman, entirely happy in his absorption with his delightful and satisfying work, takes no heed of production costs and selling values. Like the workmen of whom the Son of Sirach wrote centuries ago, they find "all their desire in the work of their craft." And so we find that this very preoccupation in the work of his hands, and the lack of any commercial enterprise in exploiting it in the public market, has resulted in the gradual decay and even sometimes in the extinction of the craft. Then suddenly we realise what we have lost, and frantic efforts are made to revive the vanished art, generally under great difficulties.

For there are still, *Laus Deo*, a few who rebel against the spirit of commercialism which threatens to engulf every right and natural attribute in the works of man and to substitute for the old healthy and honest rivalry the ethics of the dog-fight. Even to-day there is a small but important section of the public who are anxious to preserve and to encourage the old principles of handwork, of honest, homely quality in workmanship, even though this preference may cost a little more than the cheapest: who feel, moreover, that they get better value by paying more, for they are the better satisfying the inner cravings of their souls for something different from the average price-cut, standardised, mass-produced articles of commerce. And since no demand can exist unsatisfied for long nowadays in this over-organised world, we find in many directions what appears to be a combination of diametrically opposed forces, a group of handicraftsmen organised and operating to some extent on modern commercial methods. How far such organisations may succeed remains to be seen—and by success should be understood not the mere paying of dividends but the maintenance and development of an ancient and honourable tradition. There are many apparently hopeless incompatibilities to be reconciled, but it may be admitted that unless the craftsman allows himself to be organised to some degree, and realises the necessity to keep in touch with modern selling conditions, he will find his work not in sufficient demand to allow him reasonable development and return for his labours. And much as we regret the departure from the old artless, somewhat casual methods, we must nevertheless welcome any development which will keep alive the old traditions.

If the special qualities of the handicrafts are to be retained under these new conditions certain axioms must not be forgotten. For example, the cult of standardised repetition, the essence of modern manufacture, must be kept very strictly in check. It should be remembered that only so long as the craftsman is permitted to retain his originality and freedom from mechanical duplication in his work, will he be capable of producing anything of real value in his particular medium. The moment his work is standardised or catalogued, its value has shrunk to that of the machine product, and the special demand for it has vanished.

We may imagine, for instance, that a clever smith devises a particularly happy and pleasing type of wrought-iron latch. As a piece of handicraft it is eminently desirable. But if a mould be made and hundreds of replicas mechanically produced, its value becomes only fractional. If, on the other hand, the smith, or his fellow, copies it again by the same method, varying in subtle little ways the detail of the workmanship or the line, each copy will have the same value as the original, each will be an authentic and individual effort. If this temptation to reproduce by some mechanical method at a fractional production cost is firmly resisted, a unique tradition is at once established.

The standardisation of a few types, however intrinsically good, and the issue of a priced catalogue from which these may be ordered, though deemed essential in the average modern business organisation, is a wrong step in connection with any live and virile handicraft. Prices and illustrations may, indeed, be essential as an introduction and prospectus to obtain commissions, but they should be offered as examples of work once done, which, though they may be imitated on general lines, may not be exactly repeated.

A favourite claim of firms who deal in cast materials of various kinds—say in modelled lead or plaster—is that they keep in stock hundreds—or maybe thousands—of old patterns which can be reproduced at will. It might be more advantageous if they declared in their advertisements that the models were in every instance destroyed immediately the work had been completed, and that original designs were made for every commission. Such a rule ought, one thinks, to meet with the thorough-going approval of the modernist designer: it would at least prevent the repetition *ad nauseam* of a few stock patterns with which we are now so surfeited.

But, it may be argued, invention would flag; inspiration, new ideas, would be hard to find continually in this fashion. Architects sometimes say that there are only three or four basic types of plan for a house—all others are merely variants: and novelists will tell you that there is only a similar number of plots for stories. We may agree, but the number of variations and twists given to the few "pedigree" types is illimitable; and it is exactly the same with the work of any of the building crafts.

In a tiny Bedfordshire village near my home, two adjoining cottages have recently been re-thatched. One has two dormer windows, the other has one, and all three are of approximately identical size and position. The average modern workman, trained to the last word in standardisation, would no doubt have made the three roofs identical, thereby possibly saving an hour or two by doing everything in exact triplicate. But the old thatcher, still in love with his trade and revelling in his opportunity, has made all three dormers of different types, all delightful. Any craftsman who has the spark of originality in him will always seize an opportunity to "try out" a new fancy rather than repeat something already realised.

The organisation of any handicraft to meet modern conditions must inevitably come up against the temptation to use the machine for at least some operations, and even the most obstinate enthusiast for handiwork must admit that much dreary drudgery, particularly in the early preparation of the material, may be saved by the judicious employment of mechanical aids. It is a mere affectation to pretend in this age that even our proudest handicrafts can sensibly ignore the advantages which machinery offers. But let us keep it as a servant, a tool, to use for our purposes, and not allow it to become an inspiration or a dominant influence. The sensible attitude for to-day is surely to consider not Man *versus* Machine, or Man dominated by Machine, but Man assisted by Machine.

An overwhelming majority of the fittings and accessories used in building which in past ages were produced entirely by hand are now manufactured in standardised forms by machinery, and they are often very well made, if less often, though frequently, well designed. And since enormous production has fostered, by intensive advertisement and sales development, an equally large demand, the liking for hand-made things of individual character is limited to a comparative few. But it still exists, and any legitimate development of the old trades, and especially of the handicrafts, should be enthusiastically welcomed and encouraged. But we must not try to commercialise them too much, or we shall undoubtedly kill them.

BOOK REVIEWS

Architects' Accounts. By OSWALD M. BROWN (Fellow of the Institute of Chartered Accountants in England and Wales), with a Foreword by LORD PLENDER, G.B.E., F.C.A. London: Gee & Co. (Publishers), Ltd., 8, Kirby-street, E.C.1, and 41, Moorgate, E.C.2. Price 7s. 6d.

Most practitioners have dreamed of the perfect system of accounting and costing in their practices, and few can say why this perfect system does not arrive in their own cases. In most instances it is to be initiated next quarter day, or at the beginning of the next financial year, convenient datum lines which continually recede with events.

The problem has been not so much how to evolve the perfect scheme as how to get it going, and how to bridge the confused overlapping of previous happy-go-lucky methods with the precision of scientific resolution. It is here, perhaps, that Mr. Oswald M. Brown's book falls short of the welcome bolt from the blue it appears at first sight to be. It offers a draft system of accounting from a typical architect's practice professedly, but does not take into account the fact that "the typical architect's practice" hardly exists, or if it exists in the blurred outline of a composite portrait, ranges obscurely from the scale of a vast plan factory to the room in a back street where the young enthusiast draws, traces, and dots out with two fingers his effusions on the typewriter, pinning between whiles upon the door a neatly printed ticket, "Back at 3.30 p.m." It is difficult to cover such inconsistencies with a model system unless one is prepared to say the little folk are not architects at all and need not be considered.

The other problem is that the staffing of an office is a fluctuating quantity which may vary in a substantial office from a house-full of draughtsmen one year to an office-boy and typist the next. In one period it is easy to allot responsibility for the accounting system; while in a little time its labours and responsibilities are out of all proportion to the strength of the office; for whether the practice thrives or wanes, the principal is always busy, whether digging and delving or reaping.

Wolstenholme's Law of Landlord and Tenant. Second Edition by W. G. H. COOK, LL.D. (Lond.), Barrister-at-Law. (London: Butterworth & Co. 1932.) 5s. net.

In our notice of the first edition of this little work, which the author described as primarily intended for the use of students but which he hoped might also be found of service to some practitioners, we were able to recommend it as a concise guide to some of the main features of a very complex subject of law. That a second edition has been called for in a year is a sufficient testimony in itself that the work had proved acceptable to the readers for which it was intended. The author states that in this edition the whole text has been revised, and so far as we have examined it, it appears to have been brought up to date, and there are some additions, the work now consisting of 135 pages of text in place of 119. All the old features of clear text, tables of statutes and cases, and a good index, are retained, and it forms a clear guide to the outlines of the subject, containing much information in a limited space.

A Press Catalogue.

We have received from the Cambridge University Press a copy of their catalogue of books, published from Fetter-lane, E.C.4.

ILLUSTRATIONS

PLATES

Beckenham Municipal Offices.

A special article on these new buildings is given on page 438. The general contractors were Messrs. J. Elliman and Son, Ltd., and the sub-contractors were as follows :—Kleine Flooring Co., Ltd., hollow tile floors; Acme Flooring Co., Ltd., wood block floors; Merryweather and Sons, Ltd., fire hydrants and services; Diespeker and Co., Ltd., terrazzo paving, staircase and steps; Waygood-Otis, Ltd., lifts; Milners Safe Co., Ltd., strong room doors and ventilators; W. B. Fagan, sculpture and wood engraving; J. W. Gray and Son, Ltd., lightning conductor; J. Starkie Gardner, Ltd., wrought-iron staircase, balustrade, metal work, and external railings; Crittall Mfg. Co., Ltd., metal windows; Young, Austen and Young, h.w. services and ventilating contractors; F. Sage and Co., Ltd., shop fronts; Laminated Wood Products, Ltd., flush doors; Crane, Ltd., sanitary fittings; H. H. Martyn and Co., Ltd., fibrous plaster; J. E. Lucas and Son, Ltd., folding partitions; Sturtevant Engineering Co., Ltd., suction cleaning installation; Redpath, Brown and Co., Ltd., steelwork; Carron and Co., fireplaces; Bratt, Colbran and Co., Ltd., mantels and electric radiators; Claude General Neon Lights, Ltd., electric sign; May Acoustics, Ltd., acoustic plaster; Elliott and Sons, Ltd., oak panelling; Haywards, Ltd., steel sliding door; James Adams and Son, Ltd., floor springs; Hobbs, Hart and Co., Ltd., locks; Stevens & Adams, Ltd., parquet flooring; Marley Bros., Ltd., bronze grilles; Art Pavements and Decorations, Ltd., cork flooring; James Gibbons, Ltd., door furniture; Merchant Trading Co., Ltd., acoustic celotex tiling; General Electric Co., Falk, Stadelmann and Co., Ltd., electrical fittings; Synchronome Co., Ltd., electric clocks; Constructors, Ltd., cycle parks; furnishing contractors, Waring and Gillow, Ltd.; electrical contractors, Mansell, Jarrett Co.

Messrs. Lanchester & Lodge, FF.R.I.B.A., are the architects.

ARCHITECT-DESIGNED HOUSES.

As long as one can remember, "Jerry Builder" and "Jerry Buildings" have been familiar expressions amongst architects and laymen, but to-day we know there are far-seeing speculative builders and firms of repute who see the advantage of erecting well-designed houses, and so commission architects to design and detail houses for them, and even to supervise their erection.

The exhibition of drawings and photographs of the work of a group of architects well known for the quality of their domestic work, some of which we publish this week, and which are on view at the Building Trades Exhibition, was a happy thought of the promoter, Mr. Greville Montgomery, and it should be of use to builders, estate developers, and those erecting houses on the great new roads in suggesting a better standard of architectural development. If this were done and advantage taken of such opportunities, it would lessen the cry of despoiling the countryside—a constant subject of correspondence in the Press.

We are all disposed to try to preserve the beauty of the English countryside, with its old buildings, but it seems equally desirable that we should protect it from a modern invasion of ugly houses. This exhibition shows that there is at least no economic excuse for ugliness, as most of the houses shown were erected on building estates and were financially successful.

To take an actual example—the object lesson of certain houses erected on the roadside (see pages 434, 435). One view shows a bit of English country definitely improved with modern buildings—while the other photograph shows a fair example of normal ribbon development which is a suitable subject for comparison.

The landowner and speculator often maintain that the employment of an architect tends to lessen their profits. There are, however, many architects who are practical business men as well as artists, who can, and do, produce seemly small houses and develop estates with an increase, rather than a reduction, of profits. To cite a definite case—we have been informed of a building estate where all the houses were designed by an architect and erected under his supervision with the result that an outlay of £4,000 produced a considerable profit.

In the houses exhibited we are not at liberty to disclose actual figures, but the architectural quality of the work is apparent.

CORRESPONDENCE

Secret Commissions.

SIR,—I would like to believe that my experiences have been unique, but as a matter of probability, is this likely? I made no sweeping accusations against the profession, but merely related my own experiences. Another instance will give point to my statements. I have frequently been asked to select carpets and rugs for clients. Every time I have done so I have been offered a commission or presents of beautiful rugs. When I refused, I was told it was the custom. If it were not so, why should I be offered anything?

There are 1,650 Fellows, 2,700 Associates, and 2,300 Licentiates in the Institute—a total of 6,650. Any statement made by one individual can only relate to his own experience, and what proportion of that number can any one of us know anything about? The difficulties of securing documentary evidence are obvious, and, as you, sir, have said, the subject is avoided because it is disagreeable. Disciplinary action on the part of the Institute, recorded in "The Journal," would put us at least on the same footing as the medical profession.

WILLIAM DAVIDSON.

Official and Private Architects.

SIR,—I have only recently seen the leading article in your issue of August 12, with reference to Official and Private Architects, and I am very pleased that you have revived a subject to which I endeavoured to call the attention of your readers some time ago.

The matter has been dealt with very fully by you in your article, and now the essential thing, to my mind, seems to be to ensure that the contents of your article should reach the people who are primarily responsible for allowing this sort of thing to be carried on with impunity, and I suggest as a means to this end that a reprint of your article should be distributed to all members of local authorities in order that they may know the position. The members of local authorities are representative of the ratepayers (which include architects), and as such it is their duty to see that the whole-time officials employed by them are not engaged in carrying out work of a private nature and using the ratepayers' offices and materials for that purpose.

I suggest that the distribution of the reprint mentioned above might quite well be undertaken by the various Allied Societies of the R.I.B.A. There is no doubt that much of the private work which is done by public officials is carried out without the knowledge of the members of the local authority, who cannot fail to see that the ratepayers' money, of which they are the custodians, is being wasted, to the personal advantage of their officials.

Unemployment and business generally in the architectural profession is at the present time just about as bad as it can be, but I venture to think that if the private work now carried out in Government and Council offices were stopped, and transferred to the architects in private practice, the improvement in employment would be very considerable.

The last paragraph in your leading article is most important. There is no doubt that very few realise the position in regard to this matter. They have not thought about it, but if they did they would be converted to the architects' point of view and would see the justice of their case. L.R.I.B.A.

The Lighting of St. Paul's Cathedral.

SIR,—A recent correspondence in *The Times* traces the records of certain craftsmen who laboured in our great cathedral—a temple truly built with hands in a sense that must compel the love and admiration of this machine age of ours. In such a spirit we may ask how far a later generation is justified in applying the knowledge since gained to enrich their inheritance.

The Cathedral authorities, by the use of microphones, have succeeded in bringing the choir within hearing of the pulpit and may possibly later draw the largest of congregations under the spell of their oratory. The lighting also suggests a possibility, and we have the authority of Sir Edwin Lutyens for declaring that light is the most important instrument architects have to compose with—a striking truth felicitously expressed.

In contemplating the inner dome, one is struck by the darkness of the interior, which only reveals its finer depths of colour in the height of summer and in bright sunshine. One might well think that it was Wren's intention to overcome this by his bold and original design; yet even without the gloom of our smoke-laden atmosphere the effect we should expect is lost, and the explanation seems to lie in the untempered glare from the clerestory windows which cuts across the line of vision and veils all beyond without creating that sense of mystery that dominates the worshipper at Milan. Wren's difficulty is certainly not our difficulty. We can deflect the light as we wish, either to illumine the dome or to descend to the pavement, as in the Pantheon, to be reflected more softly upwards.

In St. Stephen's, Walbrook, one seems to see Wren's intentions clearly expressed. The interior is beautifully lighted, and the eye grows intimate with the harmonies of the structure without labour or restraint. Perhaps there is a half-way house between "mystery" and "illumination."

"GLORIA IN EXCELSIS."

ARCHIBALD DAWNAY SCHOLARSHIPS.

The works submitted by candidates for the R.I.B.A. (Archibald Dawnay) Scholarships will be on exhibition in the R.I.B.A. Galleries, 9, Conduit-street, London, W.1, from Thursday, September 22, to Friday, September 30, inclusive. The exhibition will be open between 10 a.m. and 7 p.m. (Saturday, 10 a.m. and 2 p.m.). The scholarships are intended to foster the advanced study of all forms of construction, and are tenable at the Schools of Architecture recognised for exemption from the examinations of the R.I.B.A.

TOWN PLANNING.

The following town planning progress in England and Wales is recorded for the month ended August 31 :—

Schemes Submitted (Stage C).—Middlesex : Ealing T.C. (Northolt). Surrey : Epsom R.D.C. (Banstead). Yorkshire (West Riding) : Knaresborough U.D.C.

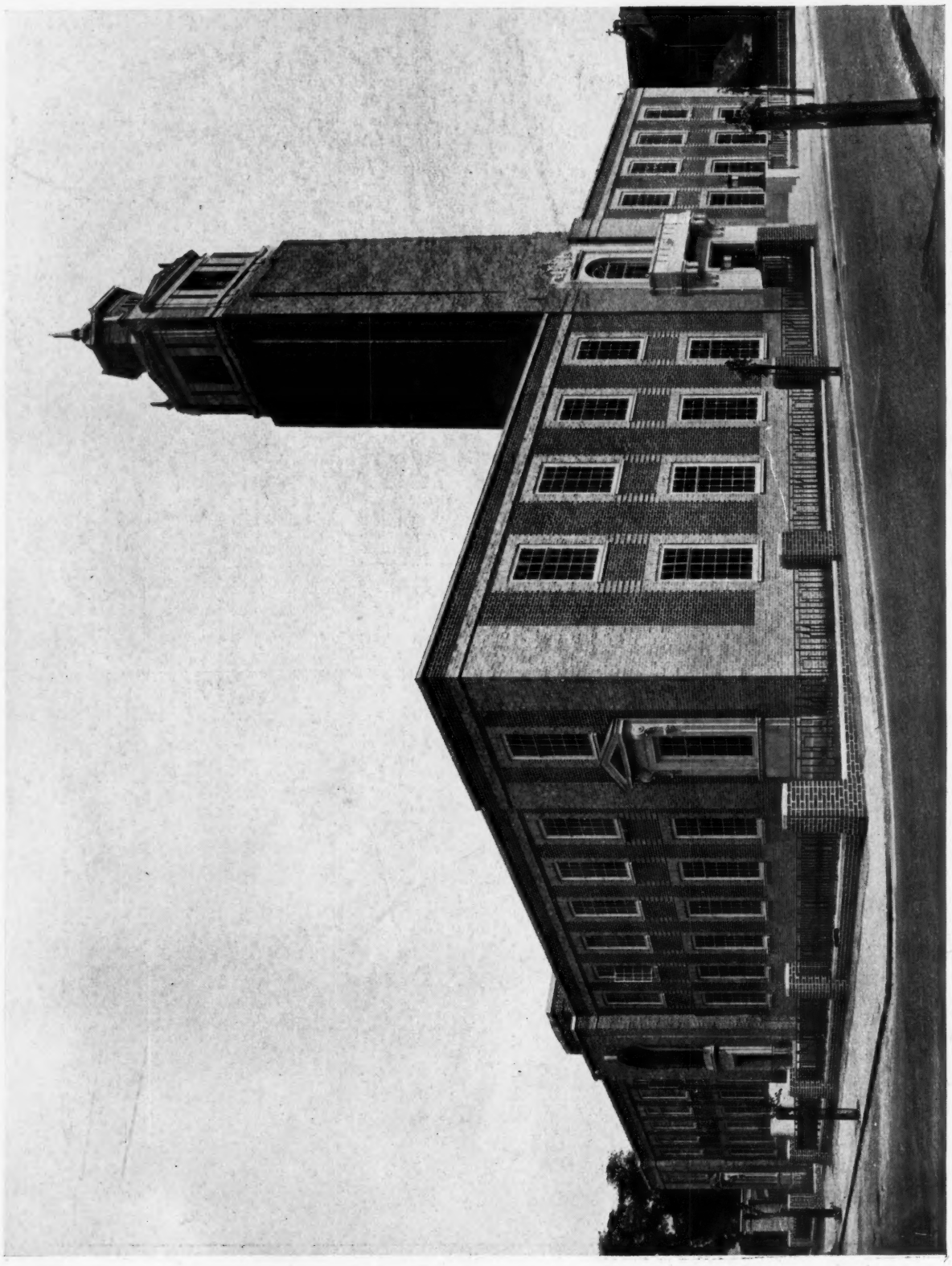
Draft Scheme Adopted (Stage BBB).—Middlesex : Ealing T.C. (Greenford).

Preliminary Statement Submitted (Stage B).—Essex : Billericay R.D.C. Kent : Tonbridge U.D.C., Tonbridge R.D.C. (Preliminary statement submitted by Tonbridge and District Joint Committee). Southampton : Southampton T.C. (No. 1 and special area).

Resolutions Received (Stage A).—Cheshire : Bucklow R.D.C., Compstall U.D.C., Knutsford U.D.C., Northwich U.D.C., Winsford U.D.C. Dorsetshire : Weymouth and Melcombe Regis T.C., Weymouth R.D.C. (Weymouth and Melcombe Regis T.C.). Hertfordshire : Cheshunt U.D.C. Kent : Herne Bay U.D.C. Lancashire : W. Lancashire R.D.C. London : London C.C. (No. 11), (Met. Boroughs of Hackney, Islington and Stoke Newington). Southampton : Basingstoke T.C., Basingstoke R.D.C. (Resolution passed by Basingstoke and District Joint T.P. Committee). Suffolk : Samford R.D.C. Surrey : Croydon T.C. (East No. 2). Yorkshire (West Riding) : Brighouse T.C., Halifax R.D.C. (resolution passed by Brighouse Regional Town Planning Committee).

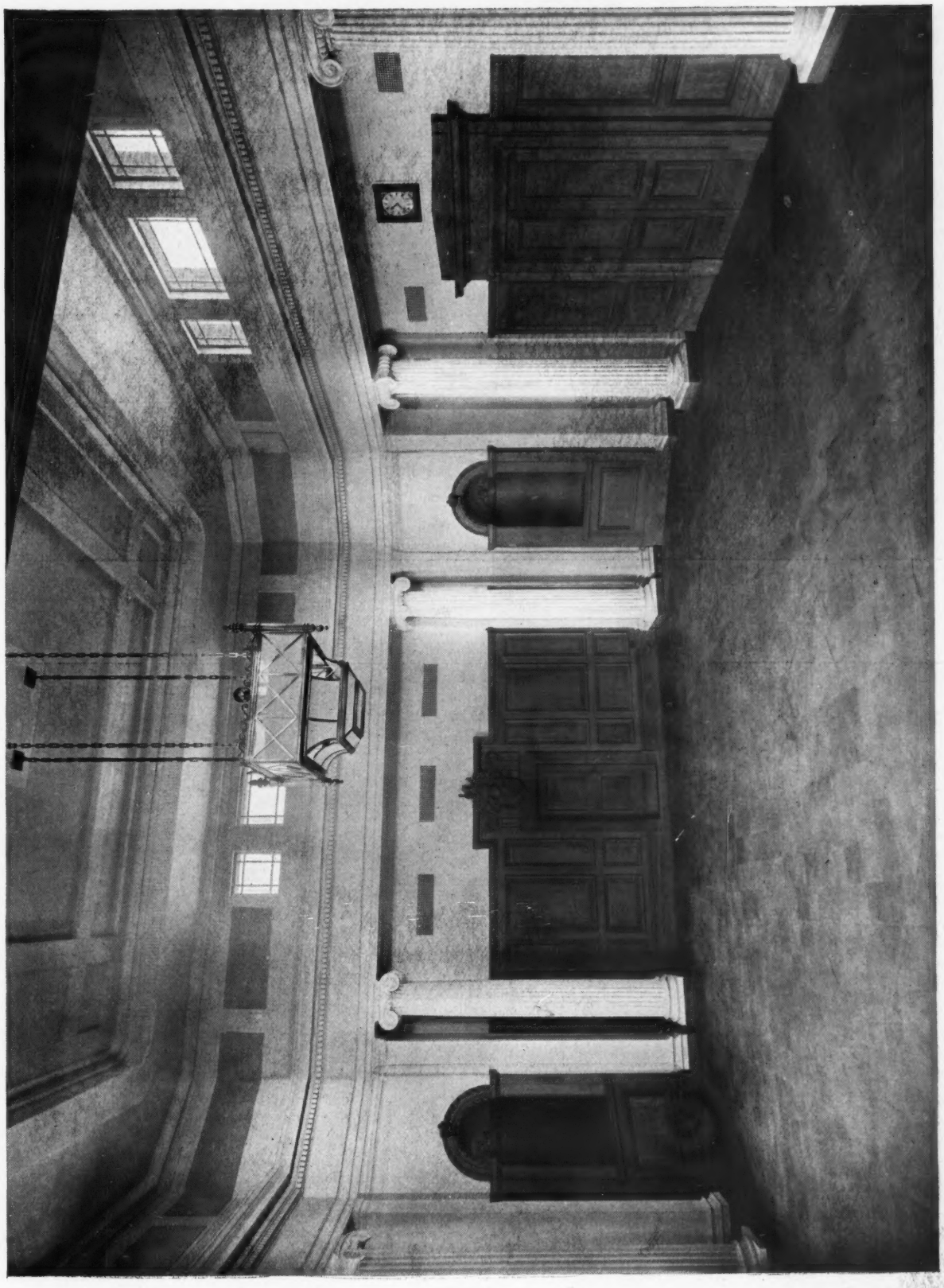
Beckenham Municipal Offices: Main Frontage.

MESSRS. LANCHESTER AND LODGE, FF.R.I.B.A., Architects.



Beckenham Municipal Offices: General View.

MESSRS. LANCHESTER AND LODGE, FF.R.I.B.A., Architects.



Beckenham Municipal Offices : Council Chamber.

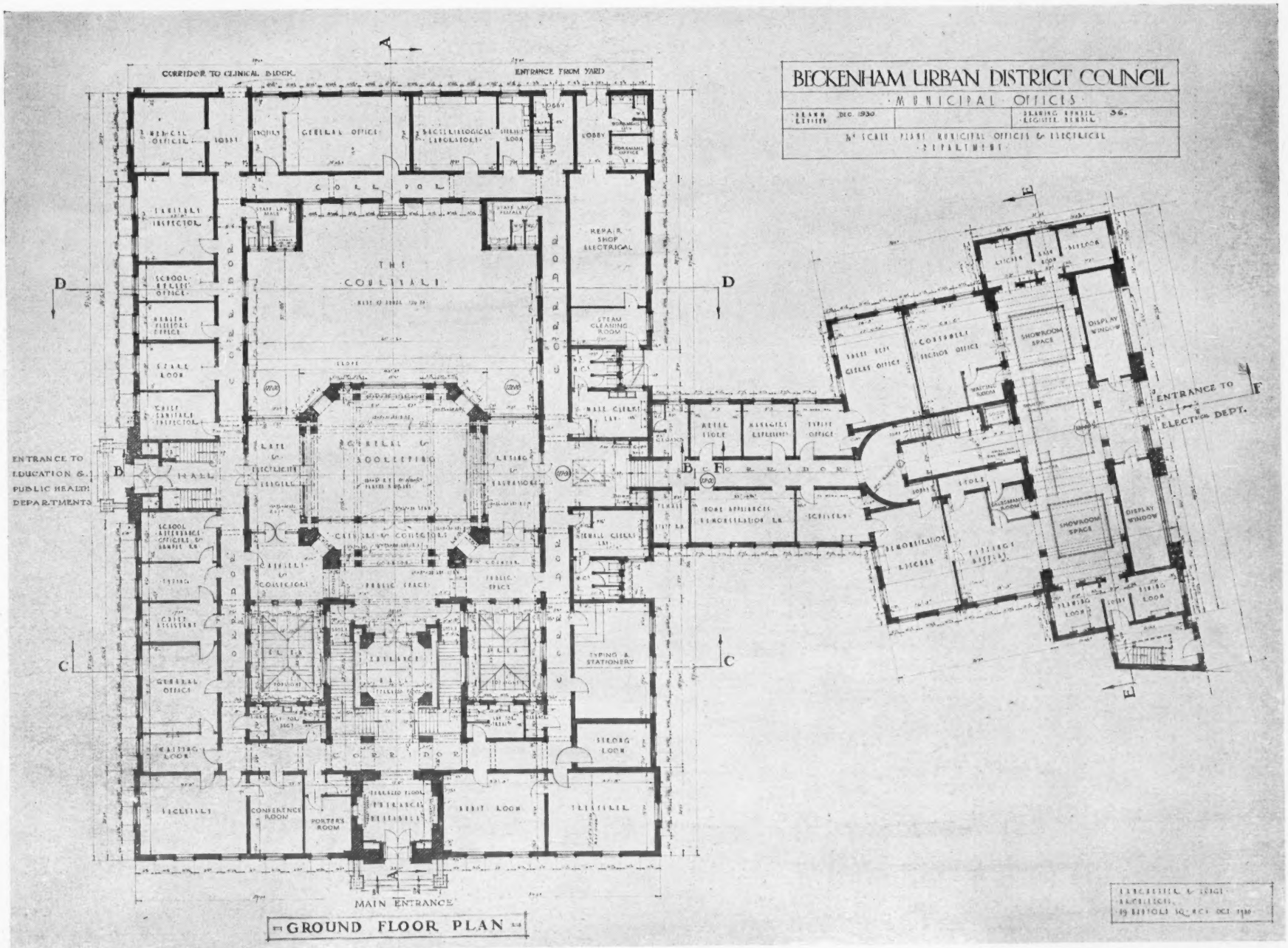
MESSRS. LANCHESTER AND LODGE, FF.R.I.B.A., Architects.

Staircase Landing, First Floor.

Committee Rooms.

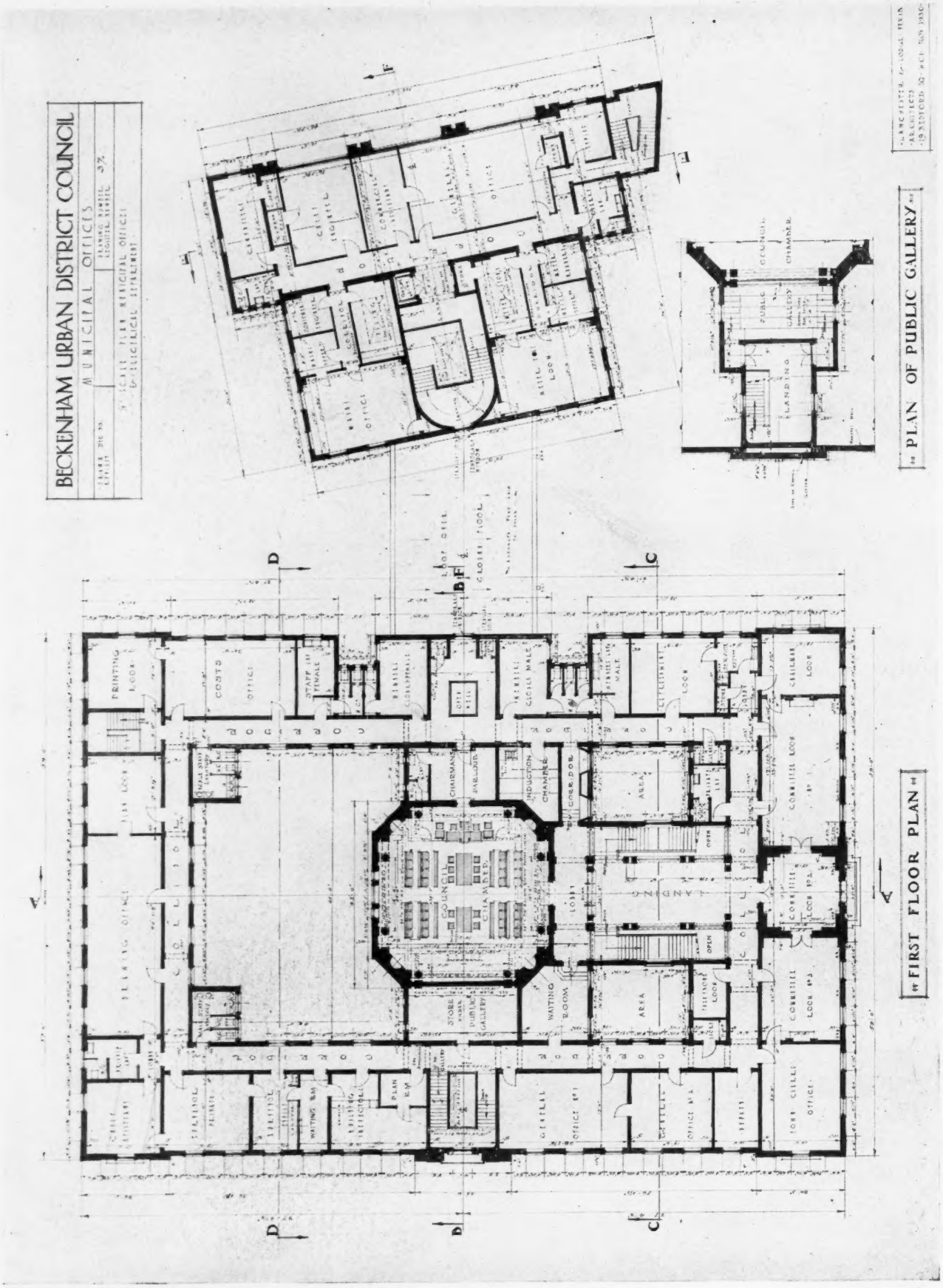
Beckenham Municipal Offices.

Messrs. Lanchester and Lodge, FF.R.I.B.A., Architects.



Beckenham Municipal Offices.

Messrs. Lanchester and Lodge, FF.R.I.B.A., Architects.



Beckenham Municipal Offices.

MESSRS. LANCHESTER AND LODGE, FF.R.I.B.A., Architects.

Messrs. Lanchester and Lodge, FF.R.I.B.A., Architects.

The Building Exhibition, Olympia: Photograph of Opening Ceremony on Wednesday.

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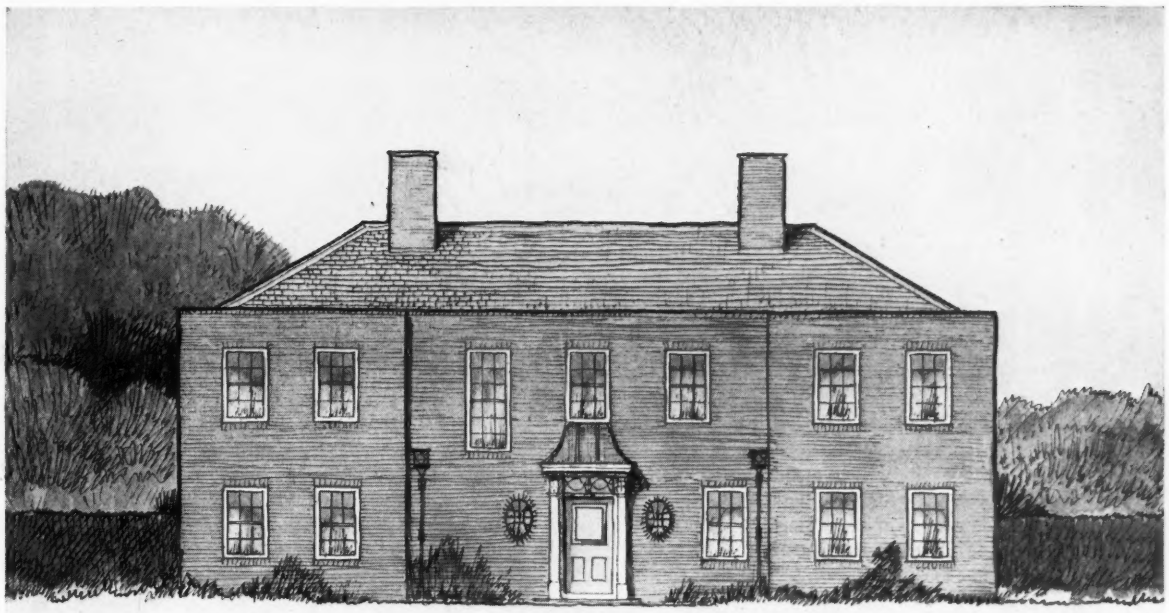
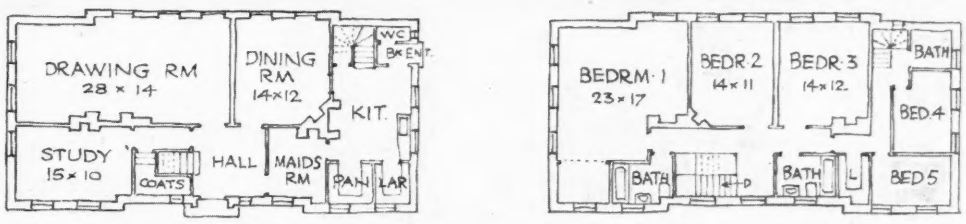
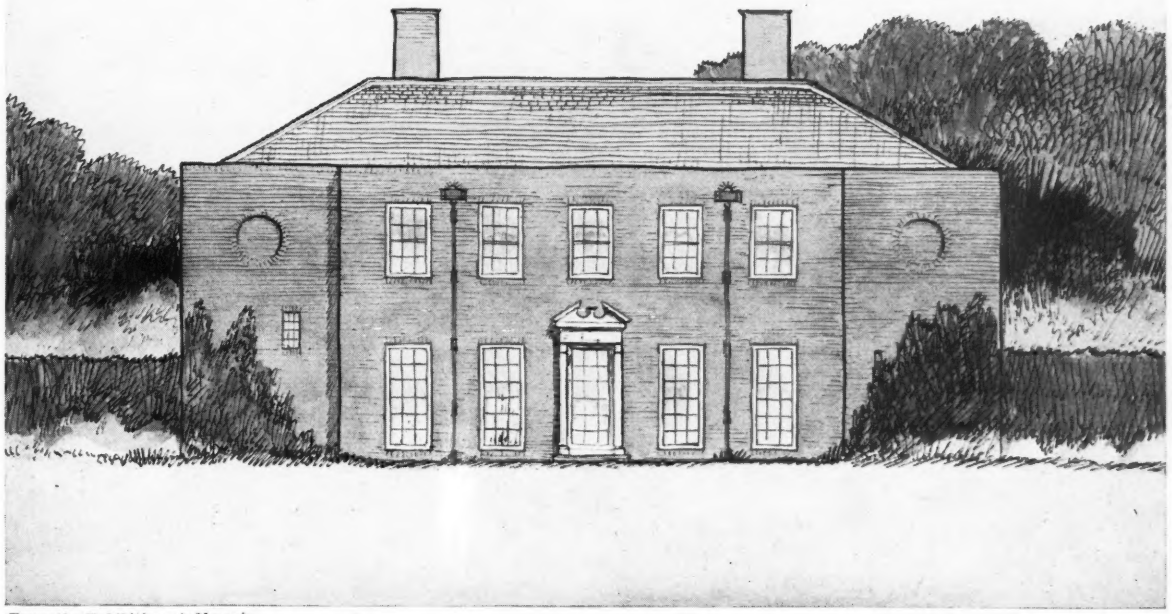


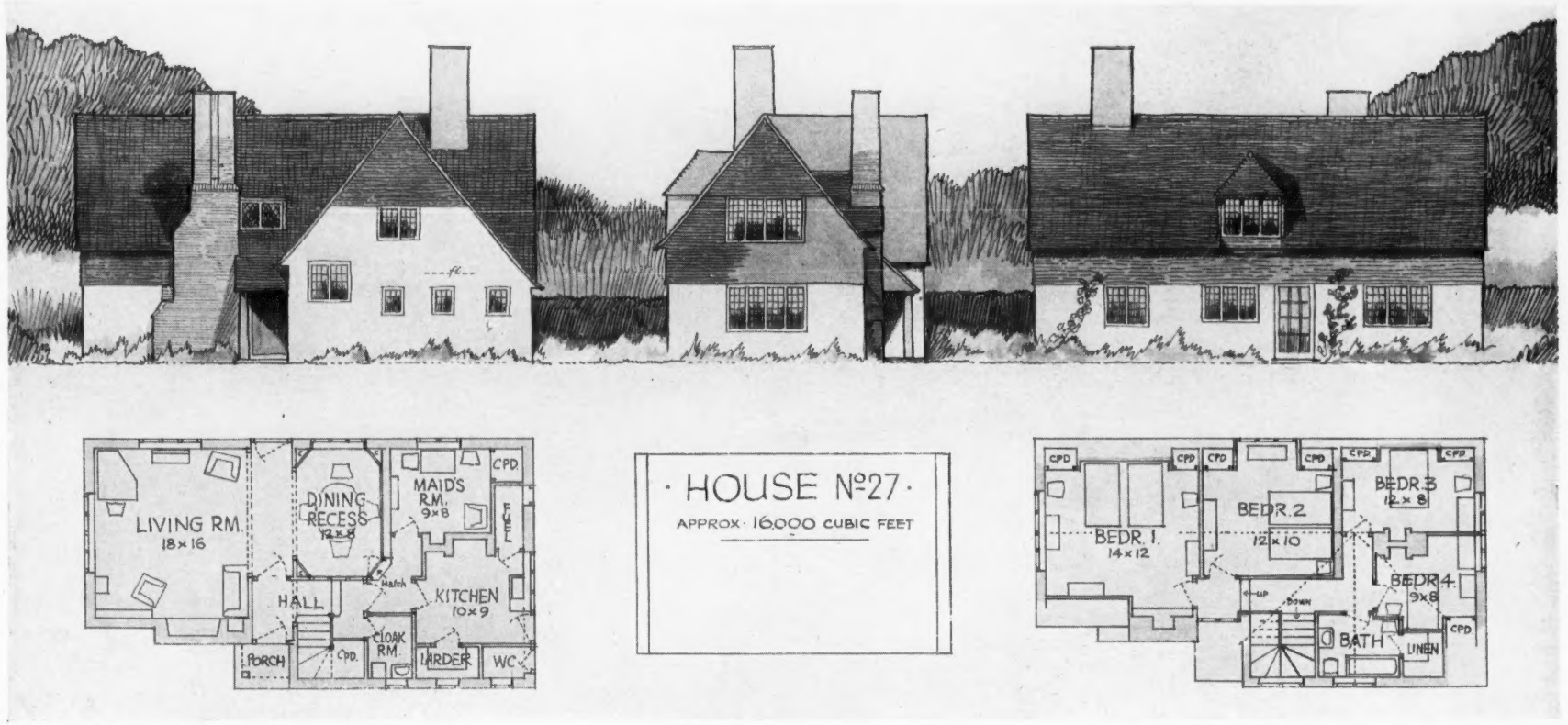




From the Exhibition at Olympia.

Design for a House.

By Messrs. Baillie Scott and Beresford, FF.R.I.B.A.



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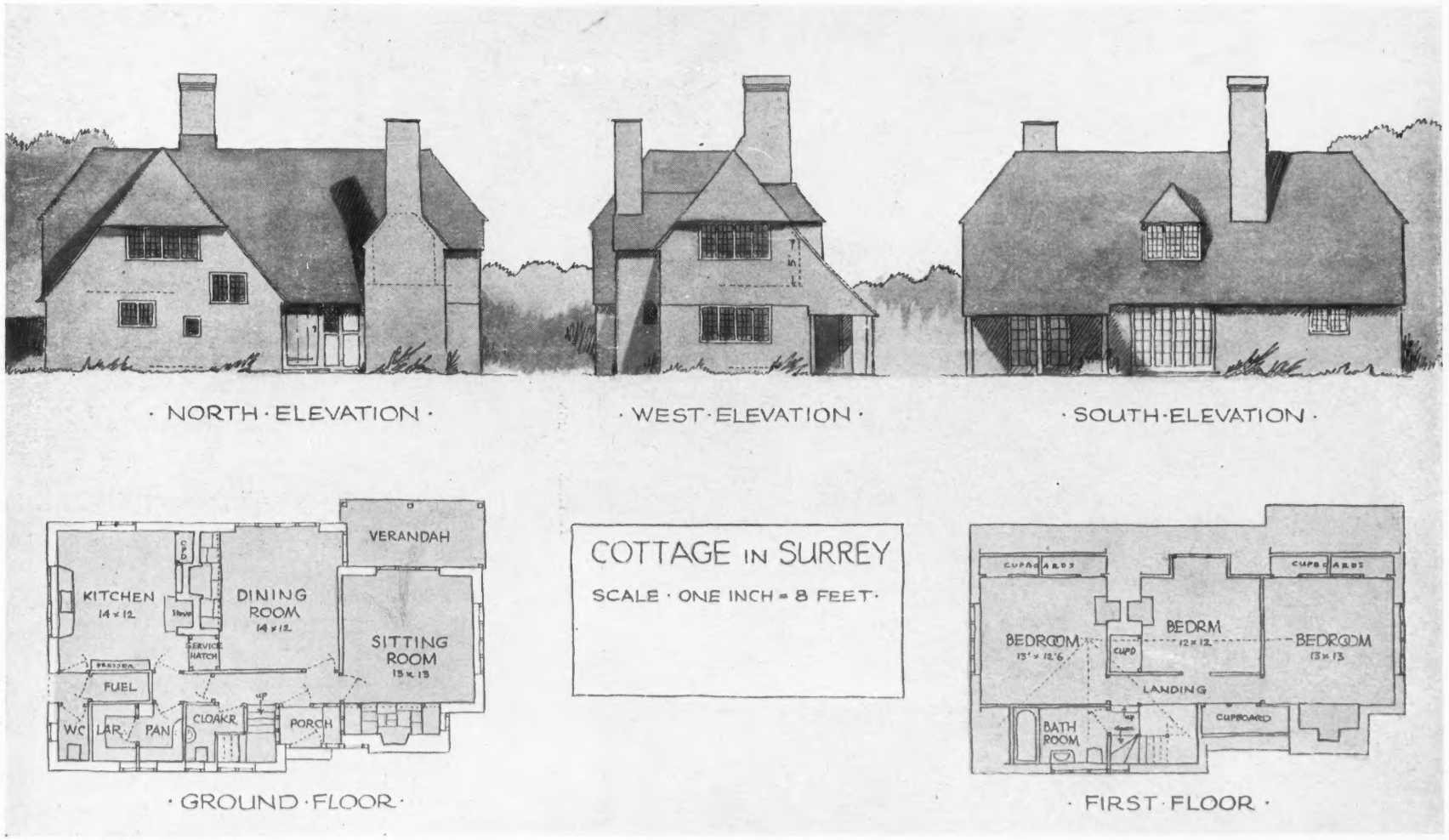
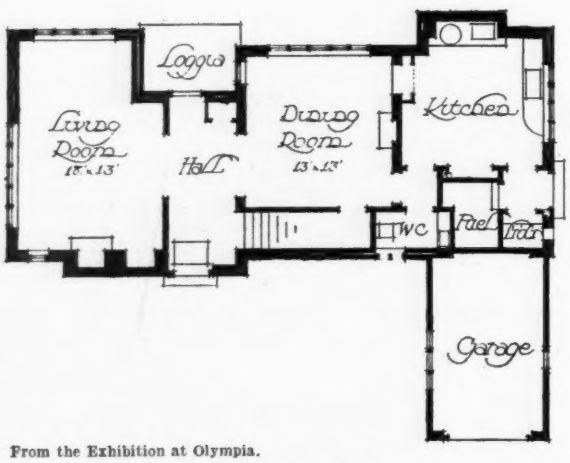


From the Exhibition at Olympia.

Design for a Cottage in Surrey.

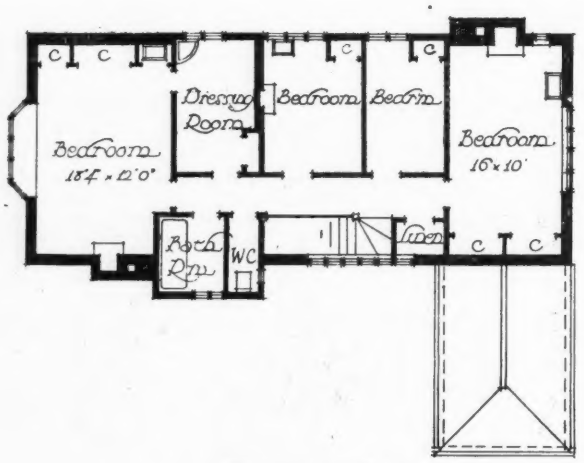
By Messrs. Baillie Scott and Beresford, FF.R.I.B.A.

ENTRANCE FRONT.



From the Exhibition at Olympia.

GROUND-FLOOR PLAN.



FIRST-FLOOR PLAN.

A House at Esher, Surrey.

MESSRS. IMRIE AND ANGELL, F. AND L.R.I.B.A., Architects.

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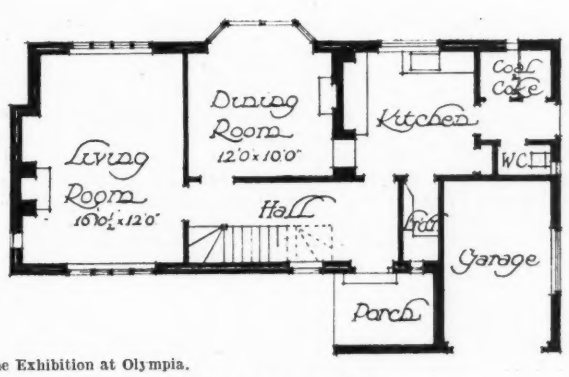
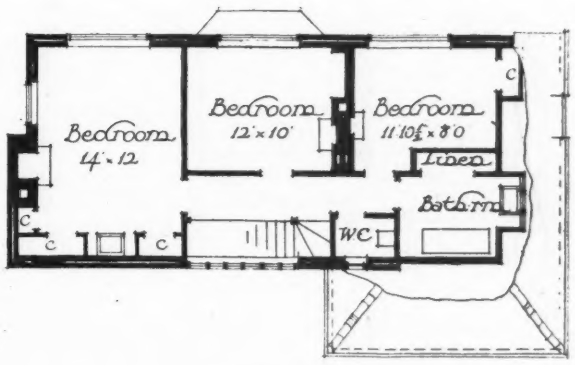


From the Exhibition at Olympia.

GROUND-FLOOR PLAN.



FIRST-FLOOR PLAN.

A House at Esher, Surrey.

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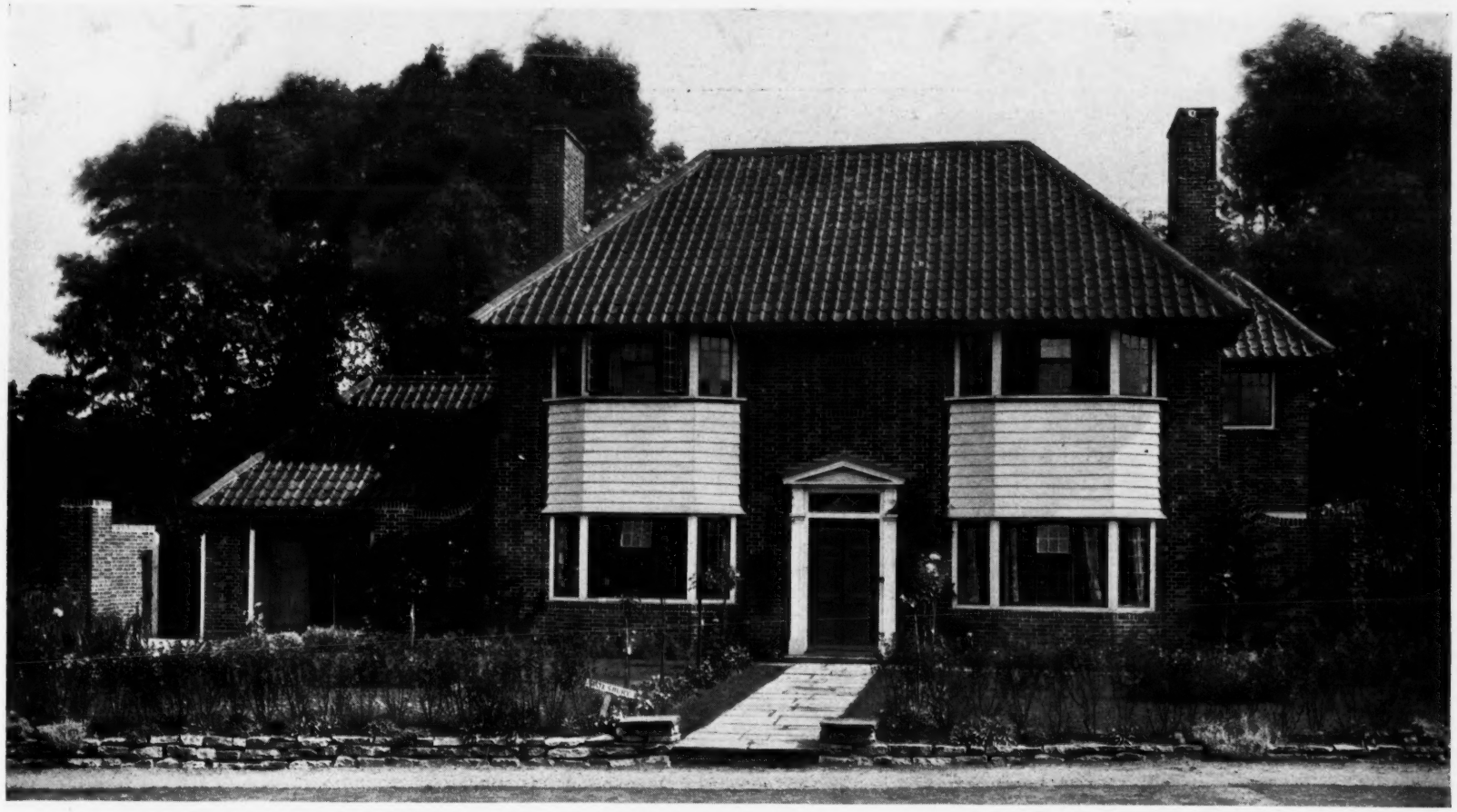

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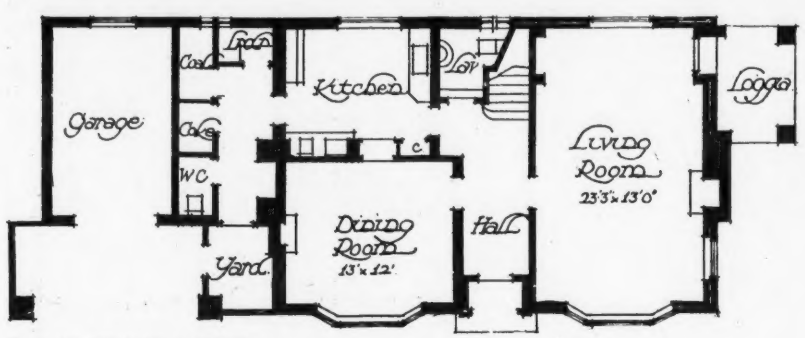
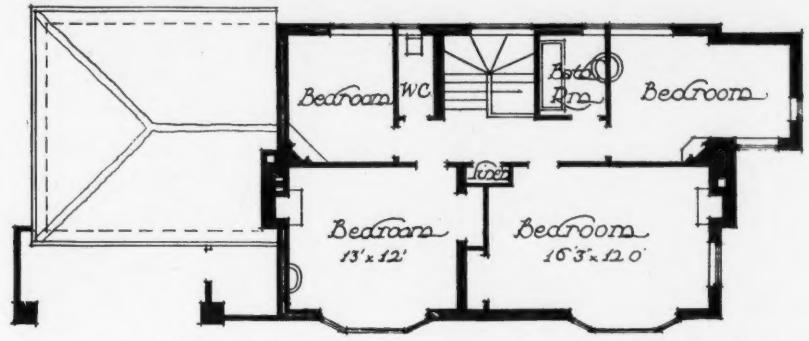


From the Exhibition at Olympia.

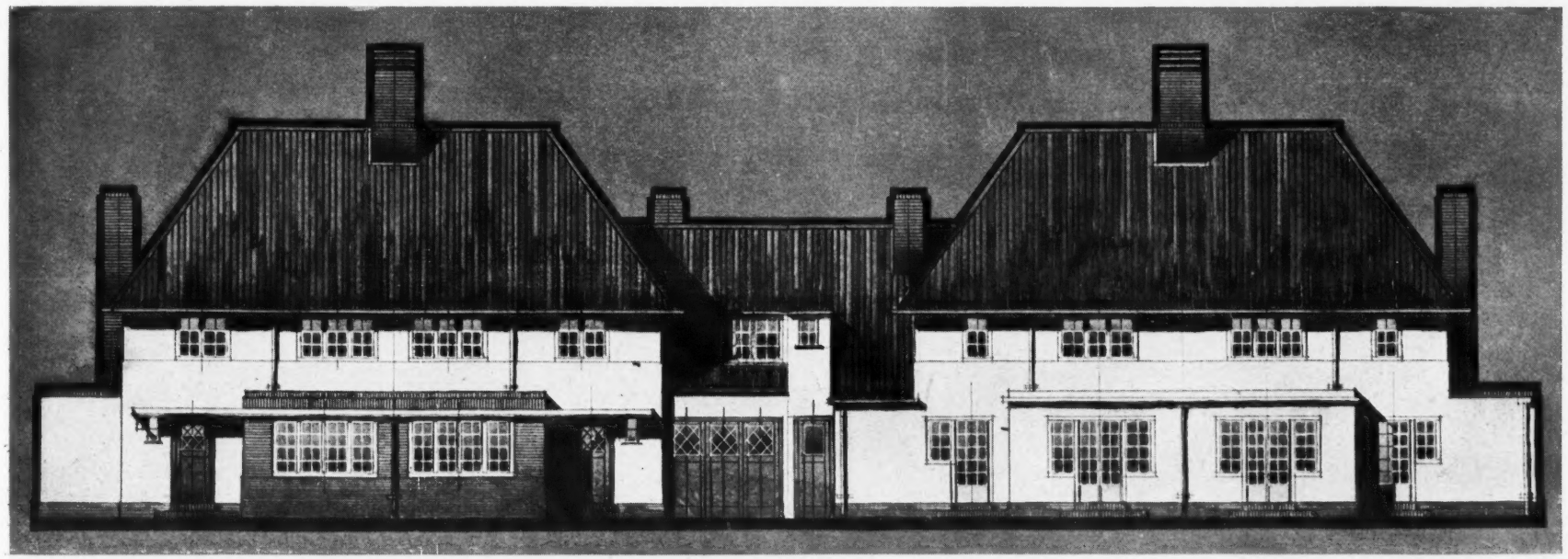
GROUND-FLOOR PLAN.

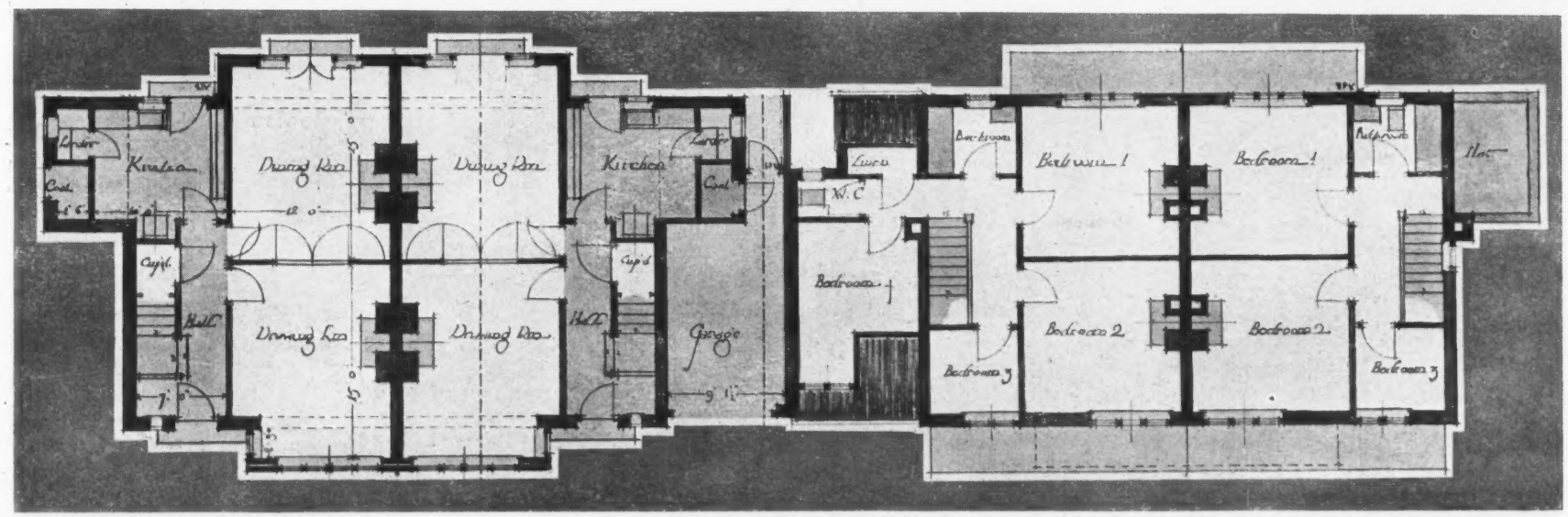


FIRST-FLOOR PLAN.

A House at Esher Surrey.

MESSRS. IMRIE AND ANGELL, F. AND L.R.I.B.A., Architects



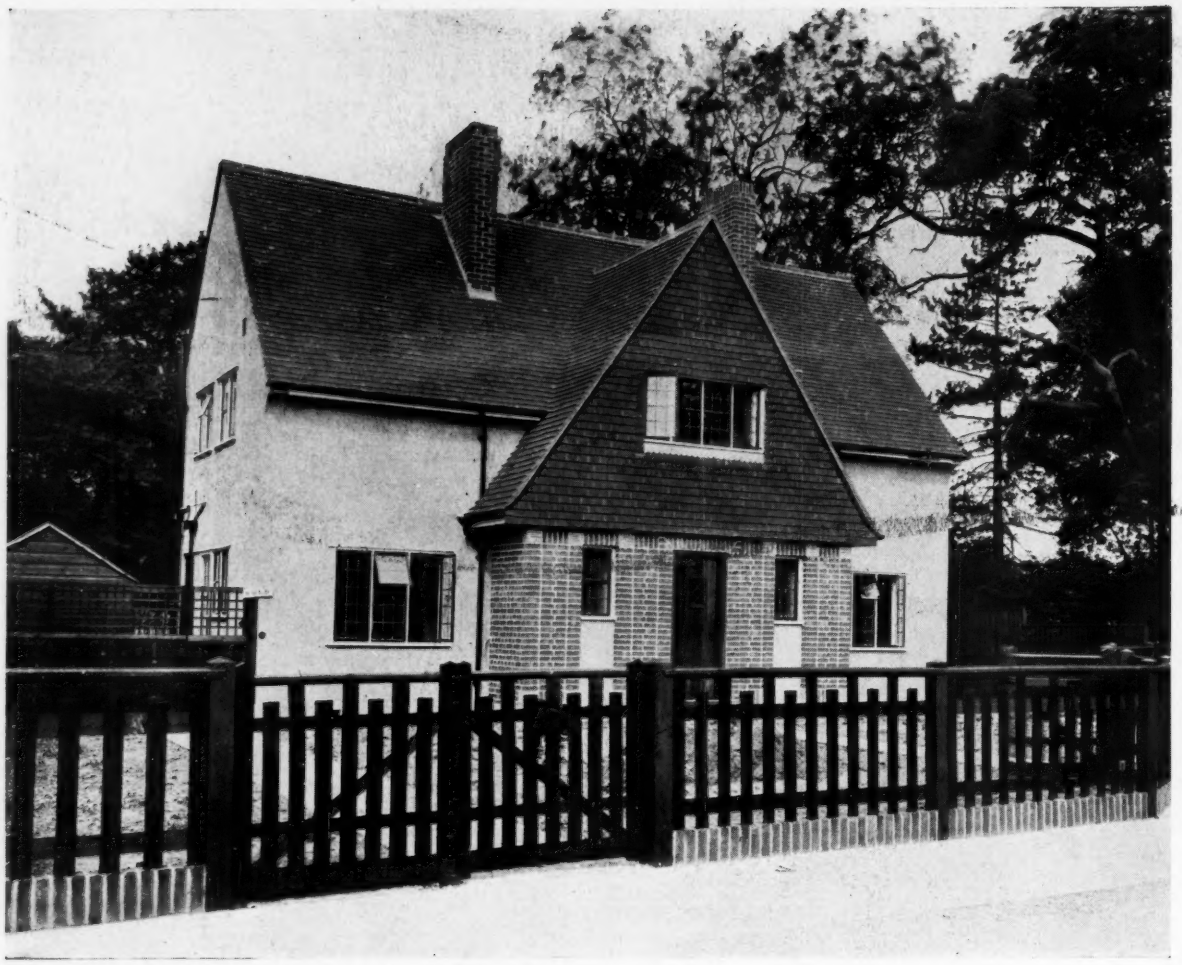


From the Exhibition at Olympia.

Design for Small Houses.

By Mr. Hubert Lidbetter, F.R.I.B.A.

Messrs. Imrie and Angell, F. and L.R.I.B.A., Architects



From the Exhibition at Olympia.

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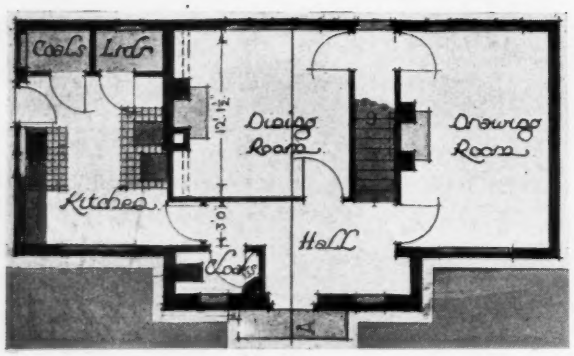
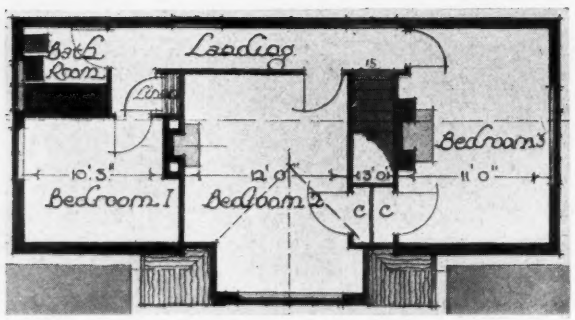


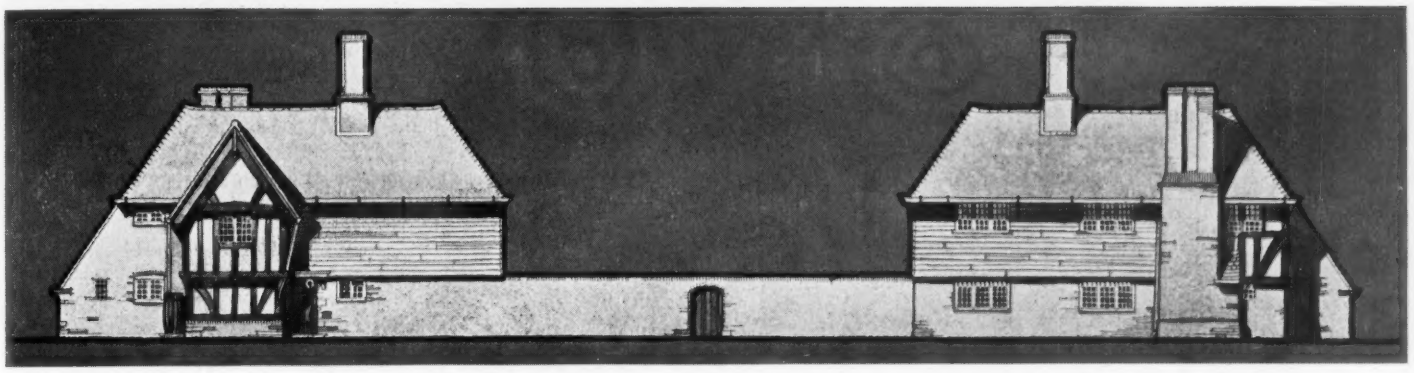
GROUND-FLOOR PLAN.



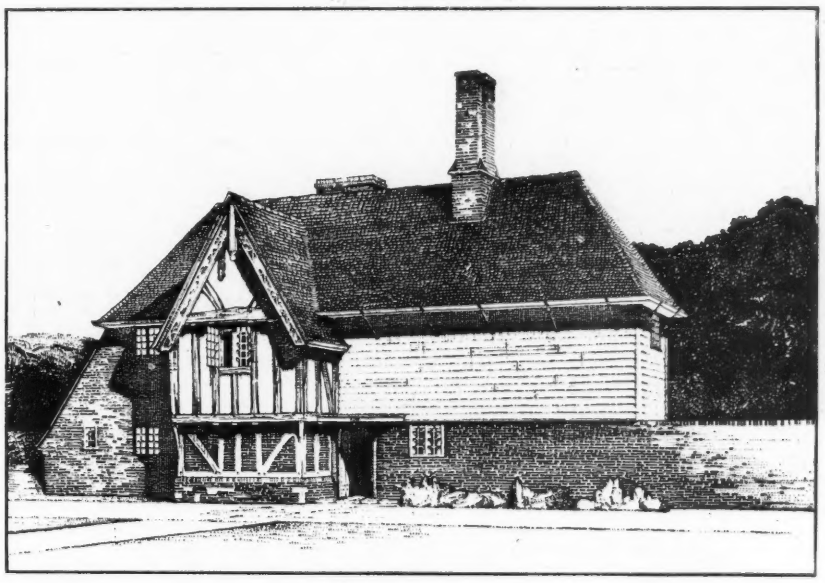
FIRST-FLOOR PLAN.

A House at Watford.

MR. HUBERT LIDBETTER, F.R.I.B.A., Architect.



FRONT ELEVATION. BACK ELEVATION.



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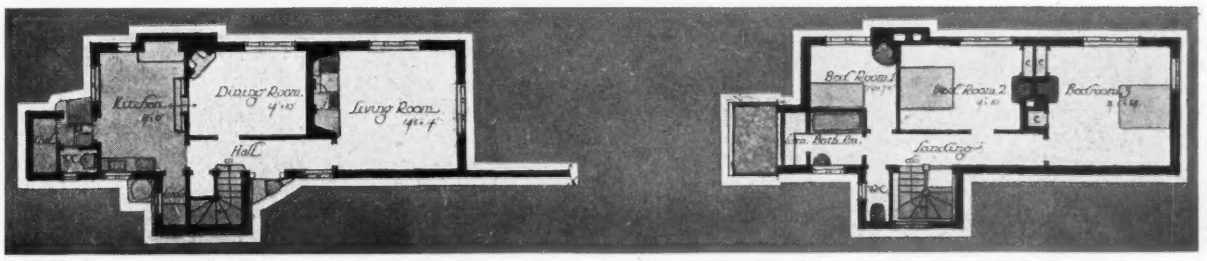


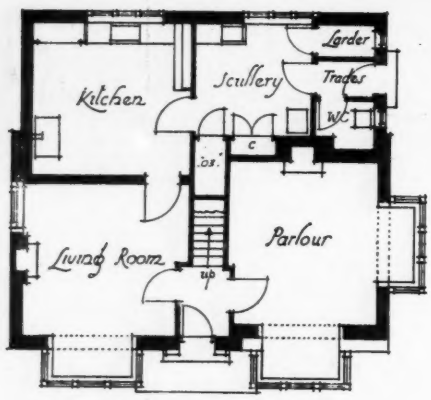
From the Exhibition at Olympia.

GROUND-FLOOR PLAN. FIRST-FLOOR PLAN.

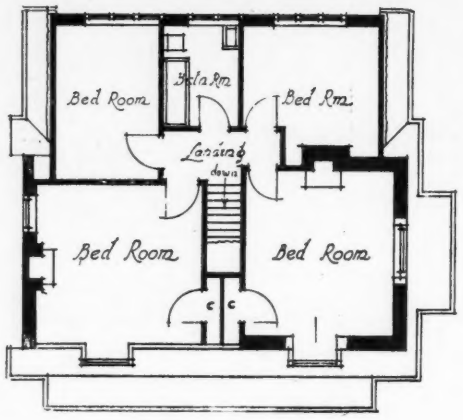
Design for a House,

BY MR. GERALD WARREN, F.R.I.B.A.

BEFORE CONVERSION.



GROUND-FLOOR PLAN.



FIRST-FLOOR PLAN.

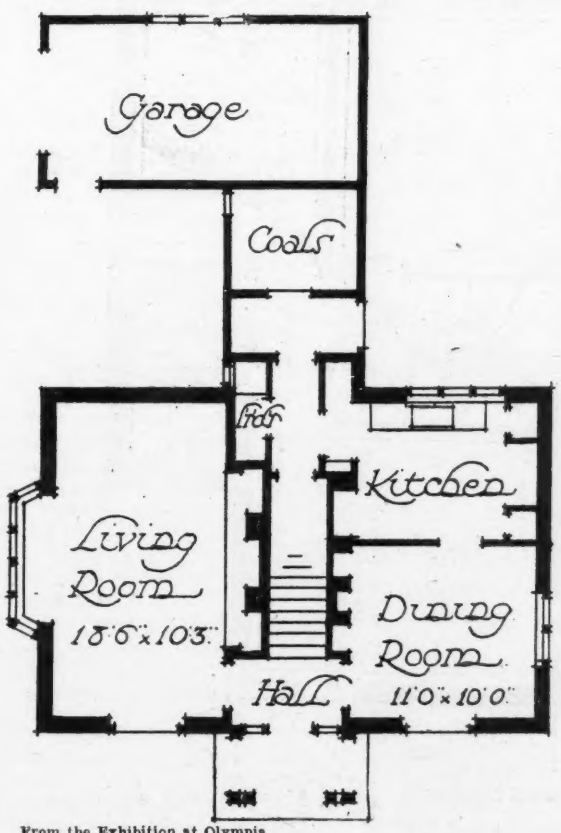
From the Exhibition at Olympia.

AFTER CONVERSION.

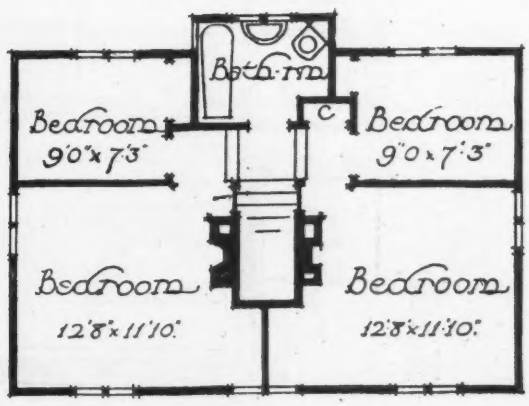
Conversion of an Old House.

MR. GERALD WARREN, F.R.I.B.A., Architect.

Entrance Front.



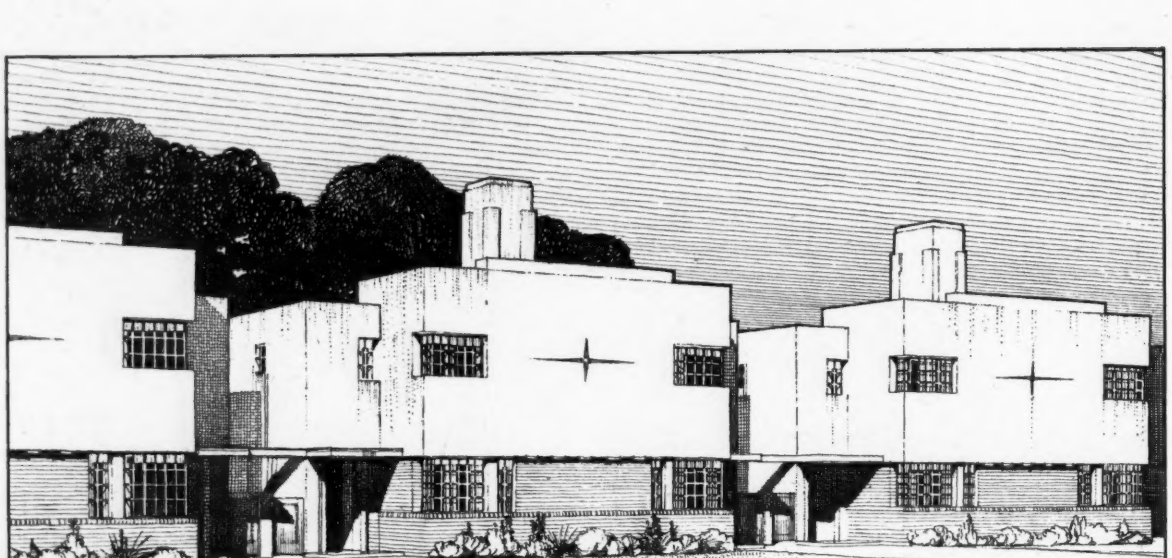
From the Exhibition at Olympia.
Ground-floor Plan.



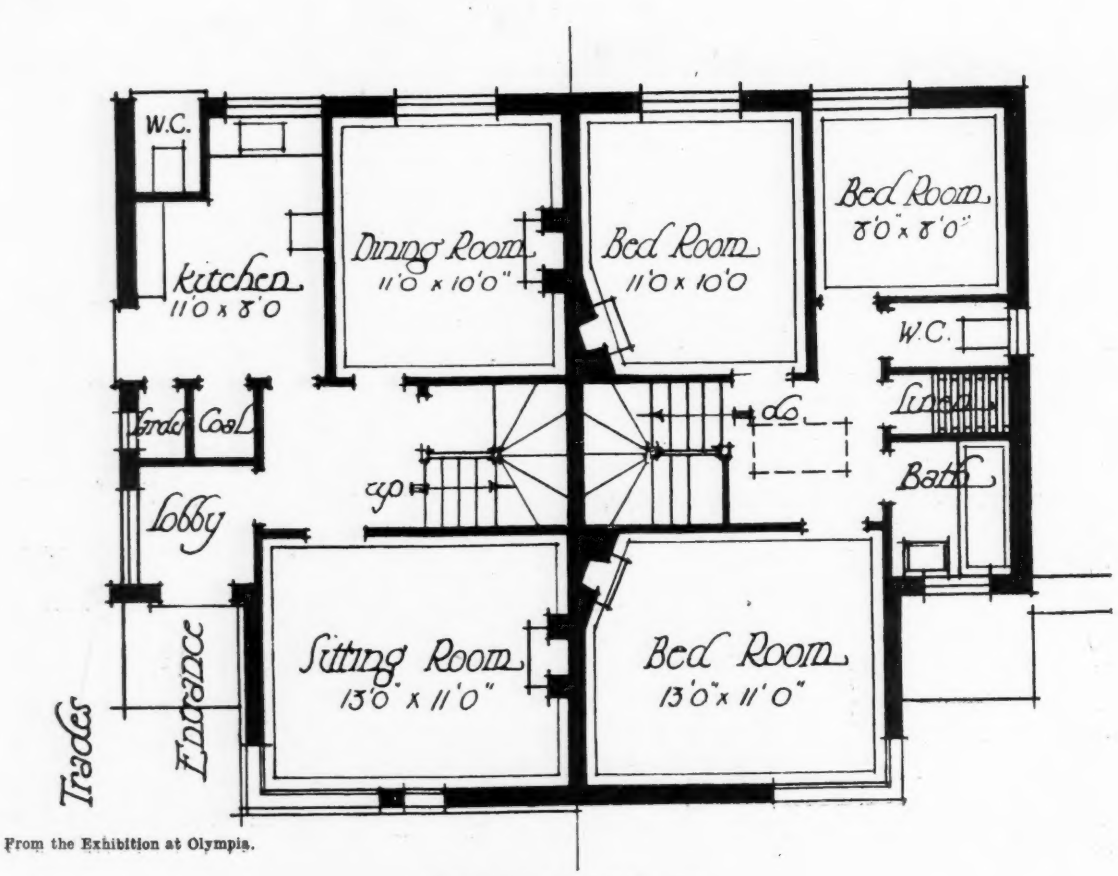
First-floor Plan.

House at Chipstead, Surrey.

Mr. H. H. Scott Willey, A.R.I.B.A (Messrs. Imrie and Angell), Architect.



Front Elevations.



From the Exhibition at Olympia.

Design for Small Houses

By Mr. Gerald Warren, F.R.I.B.A.

ORIENTATION OF BUILDINGS

THE Science Standing Committee of the R.I.B.A., in the session 1930-31, appointed two of its members, Mr. S. Pointon Taylor, F.R.I.B.A., and Mr. P. J. Waldram, F.S.I., L.R.I.B.A., to consider the formation of a Joint Committee with the following terms of reference :—

"To submit to the Science Standing Committee a report on the various points governing the planning and orientating of buildings on open or obstructed sites, having regard to the necessity of making the most of the more valuable of the sun's rays."

The Joint Committee was composed as follows :—Mr. P. J. Waldram, F.S.I., L.R.I.B.A. (Chairman); Mr. H. E. Beckett, B.Sc. (Building Research Station); Mr. A. Trystan Edwards, A.R.I.B.A.; Mr. C. Ernest Elcock, F.R.I.B.A.; Sir Leonard Hill, F.R.S. (late Director of Department of Applied Physiology, National Institute for Medical Research); Mr. G. E. Kendall, O.B.E., F.R.I.B.A. (Chief Architect, Board of Education); Mr. S. Pointon Taylor, F.R.I.B.A. (Ministry of Health).

The Report, which has been published fully in the R.I.B.A. Journal, has been mainly prepared in direct collaboration with the Department of Scientific and Industrial Research, through whom the Resources of the Watford Building Research Station and the National Physical Laboratory, Teddington, were made available. Valuable assistance has also been rendered by the Ministry of Health. The chairman enjoyed exceptional opportunities of keeping in touch with information abroad as a delegate (with the Chief Engineer, H.M.O.W.) for this country on that section of the International Commission on Illumination which deals with questions of natural light.

In order to fit the Report for publication, it has been necessary to relegate all the more valuable data, diagrams, etc., to bulky appendices, six typed copies of which, illustrated by a large number of diagrams reproduced photographically, are being prepared for the Loan and Reference Libraries, R.I.B.A., and for official libraries.

The Committee have directed their attention to the study of orientation mainly as affecting the penetration of possible and probable sunshine into buildings in the Northern Hemisphere. They decided that whilst the consideration of insolation upon the external surfaces of buildings was within their terms of reference, as affecting problems in town planning, the detailed study of insolation on external surfaces as a drying and warming agency, and as affecting the movement of moisture in brickwork and masonry, could only properly be carried out at the Building Research Station, where investigation is already in active progress.

They have therefore worked to the following programme :—

Section I.—The study and analysis of published information on the subject, with a view to extracting and epitomising such material as proved to be sufficiently simple in its application to offer promise of usefulness to practising architects.

Section II.—The classifictaion and recommendation of simple practical methods of measuring and predetermining periods of insolation : (a) by means of instruments, (b) by graphic methods; and of representing the results of insolation measurements.

Section III.—The study and analysis of problems of insolation affecting practical design in : (a) Hospitals, (b) Schools, (c) Dwelling-houses, Offices and Factories, (d) Town Planning.

Section IV.—The use of special window-glasses.

As far as possible, detailed descriptions of instruments and mathematical work have been grouped into the following appendices :—

A.—Assessment of Insolation.
B.—Duration of Insolation at Different Aspects.
C.—Possible and Probable Sunshine.
D.—Dufton-Beckett Heliodon.
E.—Waldram Sunshine Gauge.
F.—Beckett-Dufton Pinhole Camera.
G.—Molesworth Diagrams.
H.—Contangent Diagrams.
I.—Insolation of Flat and Incised Façades.
J.—Insolation of Street Façades.

We take the following extracts from the Report, relating to Hospitals and School Buildings :—

SECTION III (a).

ORIENTATION OF HOSPITALS.

The value of sunshine as a therapeutic agent in hospital wards has long been known.

Unfortunately, the medical profession in this country, whilst recognising the psychological value of sunshine, have until late years been less appreciative of its physiological value, or at best have regarded it mainly as a valuable adjunct to convalescence comparable with port wine and oysters for those who are fortunate enough to obtain them. They have certainly failed to bring sufficient pressure upon hospital authorities and hospital architects to secure the provision of solaria in which sunshine on the beds of patients can be used as a curative rather than as a restorative agency.

Florence Nightingale lived to see the Red Cross movement firmly established in her lifetime. She also lived to see Netley Hospital built, and did not hesitate to condemn in no uncertain terms the waste of available sunshine involved in its design. Unfortunately, architects, in the absence of pressure from the medical profession, have been content for many years to consider that what was good enough for Netley was good enough for them; so that of late years we have seen the unedifying spectacle of solaria improvised on the outside escape staircases of famous hospitals, where, with a little forethought and commonsense, entire wards might have been designed as solaria with a material saving of capital cost, no material increase in running expenses, and an overwhelming improvement in efficiency for their purpose.

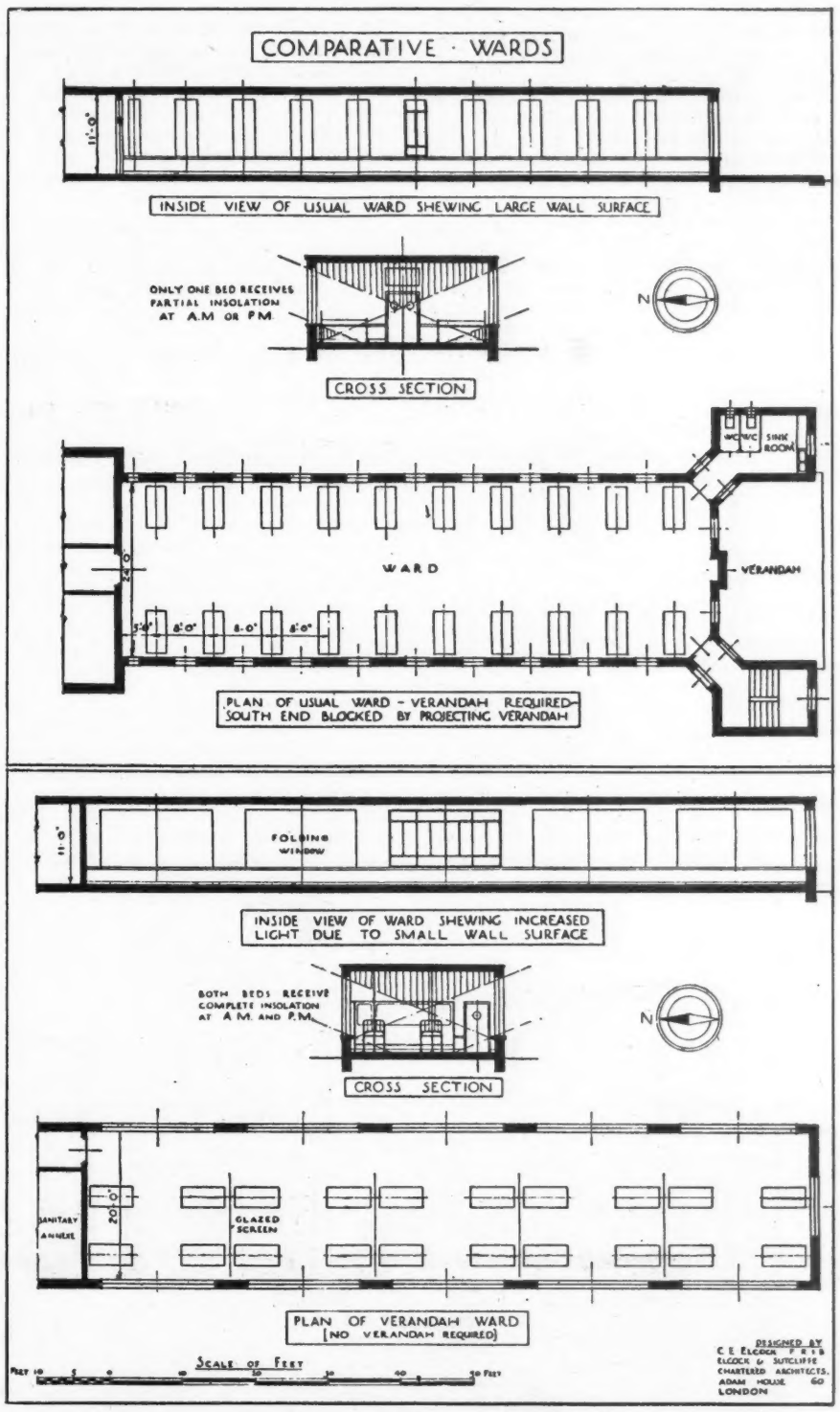

COMPARATIVE · WARDS
11'-0"
INSIDE VIEW OF USUAL WARD SHEWING LARGE WALL SURFACE
ONLY ONE BED RECEIVES PARTIAL INSOLATION AT A.M OR P.M.
N
CROSS SECTION
W.C W.C SINK ROOM
WARD
VERANDAH
20'-0"
5'-0" 8'-0" 8'-0" 8'-0"
PLAN OF USUAL WARD - VERANDAH REQUIRED SOUTH END BLOCKED BY PROJECTING VERANDAH
11'-0"
FOLDING WINDOW
INSIDE VIEW OF WARD SHEWING INCREASED LIGHT DUE TO SMALL WALL SURFACE
BOTH BEDS RECEIVE COMPLETE INSOLATION AT A.M. AND P.M.
N
CROSS SECTION
20'-0"
SANITARY ANNEXE
GLAZED SCREEN
PLAN OF VERANDAH WARD (NO VERANDAH REQUIRED)
SCALE OF FEET
DESIGNED BY C. E. ELCOCK F.R.I.B.A. ELCOCK & SUTCLIFFE CHARTERED ARCHITECTS, ADAM HOUSE, 60 LONDON

Fig. 1. Alternative Designs for Hospital Wards.

Hospital planning has, with few exceptions, become standardised, not to say crystallised or even fossilised, into the familiar ward with its long axis running north and south, with windows on each side facing east and west between beds placed at right angles to the external window walls (Fig. 1).

Whilst public opinion is demanding the most ample admission of light, air and sunshine to the interiors of domestic, factory and office buildings, hospital wards are still being planned with over 60 per cent. of the external wall space taken up by solid brickwork, and the windows so spaced that the patients receive the minimum of sunshine on their bodies and a scanty maximum on their feet.

It is gratifying to note that some architects are at last, although half a century too late, beginning to take advantage of Florence Nightingale's obvious commonsense, and are considering whether some alternative design, both of windows and arrangement of beds, would not secure to the patients some of the sunshine and air which are wasted in the older type of ward.

At Copenhagen, wards were devised where the beds were placed parallel to the wall in groups of four. This has a further psychological value in that, instead of lying in a long ward and seeing all day and every day a large number of comparative strangers in a state of ill-health, the patient is in a small group of four or six with whom he can feel at home so far as his illness may allow. This arrangement has been further developed in this country (Fig. 1), where wards are also now being erected with a few piers along the walls and long sliding windows which fold together. In suitable weather the whole sides of the wards can be opened up, allowing for the free and full ingress of sunshine and air. The actual amount of wall mass now solid occupies only 8 per cent. of the wall surface instead of 63 per cent. as in the older type of wards.

The Committee are informed that the additional cost of maintaining the necessary minimum temperature in view of the larger window area has been carefully investigated and is considered to be immaterial. Supervision is not interfered with. Glazed upper panels in the partitions enable supervising nurses when standing up to see what is fortunately invisible to patients lying down.

A material advantage of this type of "veranda" ward, as it has been termed, is the elimination of balconies in multi-storied hospitals, which both shade and obstruct the windows of lower floors. Another important advantage is the reduction in width, and, therefore, in the spans, of floors and roofs, which discounts the slight addition (about 3 per cent.) in total cube.

The investigation of various designs for wards at different aspects, with due regard to the distance apart of ward units necessary to prevent undue obstruction to useful sunshine, is obviously desirable.

It is necessary to emphasise that the maximum admission of sunshine must be considered in due relation to other considerations material to the efficiency of a hospital as a whole. Economy in corridor length, the proper and convenient spacing of sanitary accommodation, the insolation of the living quarters of the staff, and the necessity for frequent flooding of X-ray and electrical therapy rooms with natural light, air, and sunshine, are factors of considerable importance.

Provision must also be made for certain cases to which sunshine is not only useless but actively harmful. In certain mental cases, and, strangely enough, in hospitals for the treatment of advanced cases of pulmonary tuberculosis, exposure to direct sunshine may be undesirable.

In sanatoria for tuberculosis patients (as distinct from T.B. *hospital* wards) and hospitals where glazed verandas are used, ample means for ventilating the upper portions of the verandas must be provided, otherwise stagnant air may become trapped, with most deleterious results.

In this connection it may be noted that glazed balcony roofs inclined *upwards* to secure the maximum admission of sunshine to the wards from which the balconies open, with a valley gutter next the wall in place of the usual glazed lean-to roof sloping *downwards* from the ward wall with a gutter along the outer edge, constitute the best preventive of stagnant air pockets (Fig. 2).

It is essential that in the design of hospital wards architects should confer freely with the medical staff and ascertain the number of beds or wards which should be designed for cases where full insolation is undesirable.

Subject to the considerations mentioned above, the proper orientation of hospitals may be considered as governed by the following general factors :—

(1) The type of disease which it is desired to treat;

(2) The best type of ward to meet (1);

(3) The best spacing between ward and other buildings;

(4) The desirability of choosing sites and lay-outs which will secure proper orientation for all the various units.

The Committee are informed that clear and simple methods of predetermining generally and of testing in detail the insolation of wards and other units should be invaluable to architects engaged in hospital planning.

SECTION III (*b*).

Orientation of School Buildings.

The extent to which children can accustom themselves to the admission of fresh air, suffering very little, if any, discomfort, and certainly deriving perceptible benefits to health, has been determined by experience over the last twenty years in different types of classrooms and methods of planning. Beginning with windows on two opposite sides of a classroom capable of being opened over their whole area, the principles of the open-air school have been so far adopted in the design of the ordinary school that at the present time classrooms with one or both sides which can be thrown completely open are now in the decided majority. Such rooms when ranged along open-sided verandas, which now frequently replace closed corridors, result in a building which can admit fresh air in moderation, or, if the weather permits, in the fullest possible measure.

The need for thorough free cross-ventilation from windows or large openings on opposite sides of rooms used for regular teaching with some measure of protection against the weather is of paramount importance.

Of almost equal importance with fresh air is sunshine. A school should be so placed on a site that no shadow can fall upon the buildings and every available ray of sunshine can play around and enter them. In particular, it is highly desirable that classrooms where the children spend the greater part of their time should receive all the sunshine available during the six winter months, or that they should at least be flooded with sunshine at any time of the year during the hours when the children are not present.

The value of sunshine in a schoolroom lies rather in its psychological than its remedial effects. It is of some account as a warming agency. In some circumstances, however, it may be harmful, when, for instance, children sit at work for any length of time with direct sunshine falling on the white pages of their lesson-books or upon their heads.

The present-day method of planning for ventilation has both simplified and complicated the problems of orientation of the building. The problem is simpler, perhaps, because there are two sides from which to get sunshine, but it is more difficult in that wide-open windows, or open sides and open verandas, need a measure of protection not only against the sun in the heat of the day, but also against the prevailing storms and rain and, in the eastern parts of the country, against the sweeping cold winds.

Briefly, therefore, in the orientation of school buildings, the considerations are :—

(i) The selection of unobstructed and sunny sites.

(ii) The admission of some sunshine into all rooms used for regular teaching.

(iii) The planning of classrooms so that they receive the maximum amount of sunshine, having due regard to—

(*a*) Necessary protection of opening windows or sides against the weather in different parts of the country.

(*b*) Avoidance of glare and hot summer sunshine.

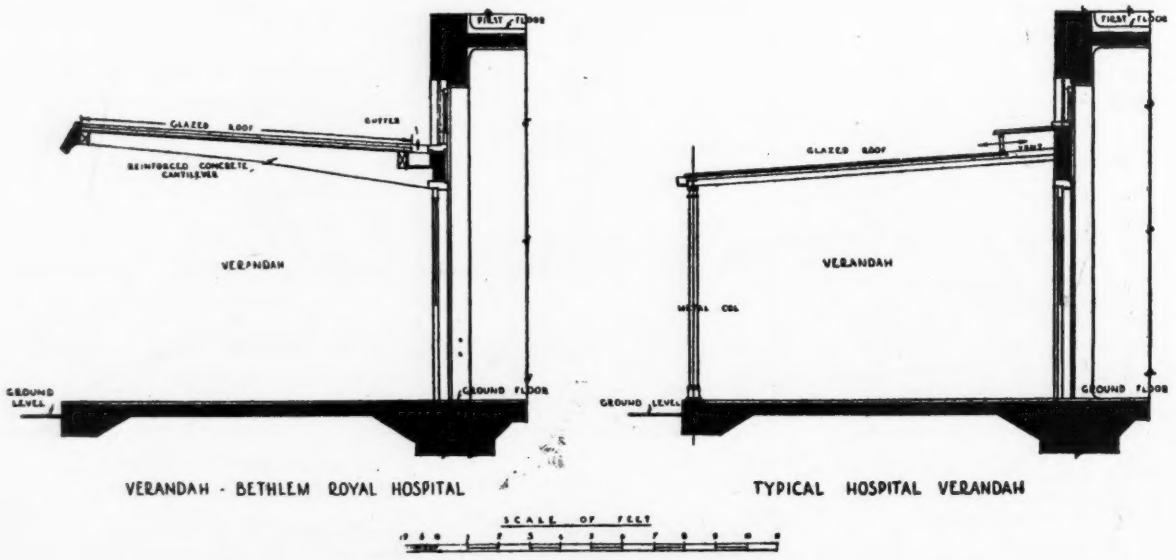


Fig. 2. Hospital Veranda Roofs.

(c) Local conditions, such as facing classrooms on to a noisy or dusty road, or other objectionable surroundings.

In regard to (i), sites for schools are now usually so large that a suitable and sunny position for the building should present no difficulties. As to (ii), the modern tendency to single-story buildings with an open lay-out with windows on two opposite sides, generally facilitates the introduction of sunshine into every room at some part of the day. In buildings of more than one story, however, particularly in those of the compact kind, the most suitable orientation is open to arguments on which a considered opinion is desirable.

The real problem is (iii), and is one on which a considerable difference of opinion still remains. Some authorities recommend a southern outlook for the classrooms, with a veranda on the south side only, to shade the windows to some extent; others a southern or southerly aspect with a protecting corridor or veranda on the opposite side, while a few favour the placing of verandas on both the south and the north sides (*a*) with high-level windows over the southern veranda, or (*b*) without any high-level windows, thus deliberately excluding direct sunshine from the classrooms.

Inquiry into the matter as a whole must take into account the type of classroom, its shape and section. But on the question of aspect alone, it appears that buildings which go furthest towards reconciling the somewhat conflicting opinions above are those in which the classrooms face south-east with slightly projecting eaves on that side, and a veranda on the south-west. Such rooms obtain the advantage of the low, early sun, which shines right across them and makes them warm and cheerful at the hour of opening, while, in hot weather, the sun is sufficiently high up by the time the children attend school to shine only a small distance into the rooms, and is off the windows altogether early in the day. The south-easterly aspect, moreover, makes it possible for summer sunshine again to enter the rooms through high-level windows on the north-west at the end of the school day, and affords an opportunity of providing a protecting veranda or corridor on the side most exposed to prevailing winds and rain.

In certain parts of the country it may be found that a south-easterly aspect exposes the school unduly to cold winds, in which case it may be necessary to face classrooms more to the south or even to the south-west. A front, however, direct to the south without some protection from the sun is not to be recommended; blinds suitable for school windows are difficult to obtain, are liable to get out of order, and tend to make the rooms stuffy and dark when they are drawn.

In regard to types of plan, the two which it will be helpful to advise upon are (*a*) the quadrangular plan which has classrooms usually on two opposite sides of a central court—this plan finds much favour, and is being repeated all over the country; and (*b*) the compactly planned building with classrooms ranged along both sides of a central corridor. In these two cases it would be desirable to discover the degree of penetration of sunshine into the line of classrooms turned from the most favourable aspect decided upon for the other line. As to the siting of classrooms generally, if the most favourable aspect can be decided upon, there should as a rule be no difficulty in arranging the classrooms accordingly, for the school plan is so pliable and elastic that it can take an almost endless variety of forms.

If the modern school, plentifully supplied with fresh air as it is, can be placed on the site so as to obtain the greatest benefit of sunshine, another very important problem in planning will be solved, and it will then be possible to carry on work indoors under conditions approaching those outside. Even so, the retention of children for long periods in buildings, however fresh and bright they may be, is to be deprecated on grounds of health, and special provision should be made wherever possible for them to be taught actually in the open air.

HOT WATER IN PLENTY

By L. E. WALKER.

The limitations of a hot-water supply that depends upon a small boiler in the kitchen range are often painfully apparent.

In the small household, where only an occasional bath is required, no great inconvenience may be felt, but where a succession of hot baths have to be provided and a constant supply of hot water maintained for other domestic purposes, it is necessary to supplement the range boiler or supplant it by an independent water heater. If it is not intended to retain the range boiler as an auxiliary, the two main pipes (the "flow" and "return") are simply connected to the independent boiler The space left by the removal of the boiler in the range is blocked up with firebricks set in a reliable fire cement

In many cases it will be a convenience if the range boiler remains so that this and the new boiler can be used independently of each other or in conjunction. If this arrangement is adopted the connections must be arranged so that when either boiler is used alone the heated water does not flow through the other and so become cooled. The illustration clearly shows how this is prevented.

There are a number of small independent boilers on the market made especially for this purpose. The smoke pipe is taken into the flue of the kitchen range, and is provided with a damper to regulate or shut off the draught. The rate of combustion is thus controlled, and fuel is not burnt unnecessarily when there is little demand for hot water. An extension piece or "magazine" is usually provided, which fits into the top of the boiler and is charged with fuel each night. The fire then burns without attention and ensures a plenteous supply of hot water in the early morning. Any sort of fuel is used, but coke is recommended as the cheapest, cleanest and most efficient. All household rubbish and garbage can be burnt without smell, and, incidentally, give heat in the burning.

No one who has experienced the comfort of a continuous supply of really hot water which this arrangement gives would willingly return to the old style of things. The independent boiler is sometimes coated with a heat-conserving composition, which adds greatly to its water-heating efficiency, but in most cases this is not necessary, and then the boiler radiates heat which, in the winter, adds to the comfort of the kitchen or scullery where it is fixed. The capacity of these boilers is usually sufficient to serve also one or two small radiators fixed to the existing pipes at convenient points. These radiators should be fitted with taps to shut them off in cases there may be an exceptional demand for hot water to be drawn off.

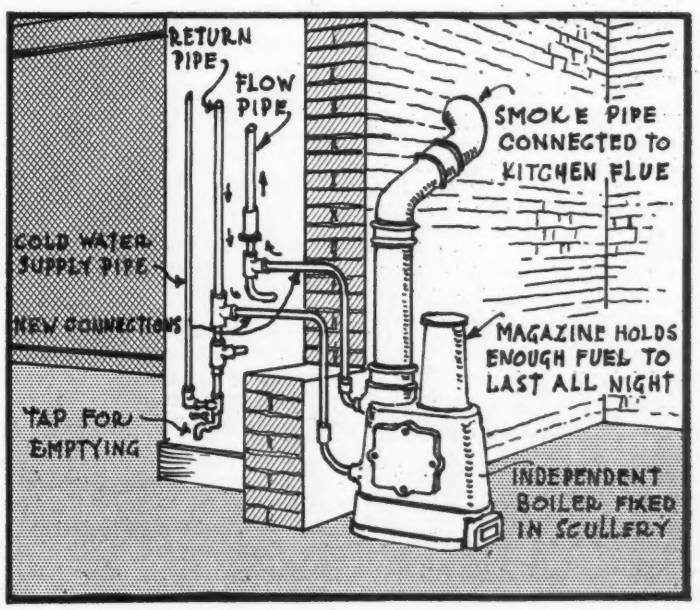
There are two objections to using the same boiler for heating the house and also supplying hot water. The chief is that if both services are to be performed well in winter, when there will be the maximum demand upon the warming system, the boiler must be of such a size that it will be extravagant of fuel in summer, when it is only required to supply hot water from the taps. The second objection is that lime is likely to be deposited in pipes and radiators from the fresh water that is continually entering the system. This difficulty can be overcome by fitting a storage cylinder containing a coil, or inner cylinder, through which the water from the boiler circulates, and thus heats the water for the domestic supply, which is in the outer part of the cylinder. The pipes that supply radiators are connected direct to the boiler. With such an arrangement the only fresh water that enters the boiler and heating pipes is an extremely small amount necessary to make up for evaporation, and they do not get "furred up."

The arrangement of the pipes for heating a bungalow, which has all its floors at the same level, may present some difficulty, because it is necessary for the water that has travelled to the radiators and given up its heat, to return to the boiler.

We are accustomed to say "hot water rises," and so it does, but only because cold water is heavier and therefore sinks, so displacing the hot water and causing it to travel upwards. In arranging a hot water circulation, it is best to take the flow pipe from the boiler to highest point by the shortest route and then let the pipe fall all the way back to the boiler. The greater length of falling pipe containing water that is getting colder and heavier as it progresses, provides the motive force that causes the water to circulate.

You will get a good, although not exactly correct, idea of the principle at work if you liken the stream of water in the pipe to a long train of trucks upon a switchback railway. Imagine that the loading of the trucks gradually decreases from the front to the tail of the train. As the train crests a rise, the heavy front trucks going downhill increase the momentum and drag the lighter trucks at their tail to the top of the incline. When the heavy front truck starts going up the next incline the impetus of the train is checked, and this is precisely what will happen to the water in the pipes if it is necessary to make them rise up in their return to the boiler, after, for instance, having been dipped under the floor to get past a door opening.

Another objection to dipping the return pipe is that air will collect at the top of the vertical pipe, where it resumes its downward journey. An air lock of this sort may interfere seriously with the flow of water or give rise to those rumblings that sometimes occur in "the works" of a heating system.


RETURN PIPE
FLOW PIPE
SMOKE PIPE CONNECTED TO KITCHEN FLUE
COLD WATER SUPPLY PIPE
NEW CONNECTIONS
MAGAZINE HOLDS ENOUGH FUEL TO LAST ALL NIGHT
TAP FOR EMPTYING
INDEPENDENT BOILER FIXED IN SCULLERY

K

PROGRESS OF BUILDING RESEARCH

Many important developments in connection with the progress of building research carried out under the Department of Scientific and Industrial Research are referred to in the Report of the Building Research Board for the year 1931,* which the Department has just issued. Below we give a summary of the Report :—

Reinforced Concrete.

In response to a request to the Department from the London County Council, a Committee has been set up " to review present methods and regulations for the use of reinforced concrete in building, and to make recommendations for rules of practice embodying the best available technical information and experience."

The report states that in making their request " the Council referred to the work of their Advisory Committee, considering the amendment of the London Building Act, 1930, and stated that the Committee were impressed with the code of practice for the use of structural steel in building which had been prepared by the Steel Structures Research Committee. They felt that their work would be equally facilitated if they could be furnished with a similar code for the use of reinforced concrete."

Control of Fire Risks.

Again, at the request of the London County Council, the Building Research Station has prepared memoranda relating to the legal requirements designed to control fire risks. The report points out that two distinct methods can be adopted in framing such regulations. " The use of a specific material in a specified manner," the report states, " may be demanded and details of construction laid down; that is to say, the applicant may be told how to build to obtain the approval of the authorities. Alternatively, the requirements which any material or portion of a structure must be able to meet may be specified, no details as to materials or method of construction being given; that is to say, the applicant may be told what the final requirements are, but not how to meet them. Generally speaking, the present London Building Act adheres to the former method. It is a method which functions well, so long as it is dealing with traditional materials and methods of construction; in this case, the tenets of safe construction have been arrived at through generations of trial and error. On the other hand, it is a method which soon breaks down when dealing with new materials in an era of rapid development of types of construction. The second method, by its avoidance of particularisation, is no doubt best suited to modern conditions. It relieves the authorities of the practically impossible task of covering by detailed instruction every material and combination of materials and every constructional method which may arise. It places on the applicant the onus of proof as to suitability. It has, however, the disadvantage that it does not give a guide to practice, and since a high proportion of the building work controlled by regulation is carried out with traditional materials in a traditional manner and without professional supervision, this disadvantage is a serious one. The solution of the problem, for the time being, may therefore be said to lie in a more judicious combination than is at present employed of the two methods, confining the first method to the traditional materials, brick, stone, timber, etc., and providing for the newer materials and methods, and future developments, by the second."

Testing of Material for the Industry.

A further important development relates to the increasing number of requests received by the Building Research Station for tests of materials both old and new. The requests, the Board states, are of two types. On the one hand, it may be a question of a whole series of tests selected with a view to enabling a report to be furnished on the general suitability of a material for building purposes; on the other hand, a single test result only may be wanted. For the Station to meet all the requests of both types would entail expansion and the duplication of expensive plant and equipment."

The purely logical solution of setting up a National Testing House has not been adopted on account of financial and other considerations. Instead, a scheme has been worked out in collaboration with the various professional societies interested in the matter, by which the assistance of commercial testing houses is being enlisted in a co-operative scheme. "The essence of the proposed scheme is for the Station to refer individual tests to approved testing houses. The results of these tests will be incorporated in certificates issued by the Building Research Station. The Station will also utilise the services of such testing houses for routine tests which form part of a general investigation of a material on which a Government report is sought."

In order to safeguard the position of the testing houses of the department, a committee consisting of the Presidents of the professional institutions consulted, and, under the chairmanship of the chairman of the Building Research Board, has been appointed to decide upon applications from laboratories for inclusion in the scheme and to consider questions arising regarding the working of the arrangements.

Tests of Fire-Resistant Materials.

"The question of tests for the fire resistance of building structures," states the report, " is a special one. Many requests for such tests have been received by the Station during recent years. It has not been possible to meet these requests; first, because a sound basis for fire testing had not hitherto been enunciated; secondly, because the necessary technique had not been developed at the Station; and thirdly, because the necessary testing facilities were not available, either at the Building Research Station or elsewhere in this country. The first difficulty has been removed by the recent issue by the British Standards Institution of 'Draft Tentative British Standard Definitions and Methods of Test for Fire Resistance, Incombustibility and Inflammability of Building Materials and Structures.'

" In these circumstances, it has been considered expedient to invite those firms who are interested in the provision of these facilities in a central and authoritative testing laboratory, and who are prepared to bear a share of the financial support necessary for the establishment of these facilities, to attend a conference to discuss how best to attain the desired end. Many firms have already accepted the invitation to the proposed conference."

Efficiency of Heating in a Building.

To speed up results and to overcome experimental difficulties in connection with work on the efficiency of arrangements for heating buildings, a proposal has been made to construct, at the Building Research Station, a " controlled weather house." " In this house," it is stated, " the walls, floor and ceilings of an experimental room of practical size would be exposed to controlled conditions by enclosing such a room within a larger structure, the temperature of whose walls would be artificially maintained. With such an installation, the study and comparison of different types and dispositions of heating systems would be greatly expedited.

" Before a case could be presented for the undertaking by Government of the financial responsibility for the erection and maintenance of this proposed building, we felt it essential to ascertain what form of practical support could be provided by the industry. We are gratified to find that the Council of the Institution of Heating and Ventilating Engineers is keenly interested in the proposal, and is endeavouring to secure the requisite financial support from the members of the Institution. We have every hope that adequate funds will be made available which will allow for the full development of the scheme.

Heating of Schoolrooms.

The report contains an account of some investigations on the heating of school classrooms by radiant heat. Experiments were carried out in a Willesden school lent by the Willesden Education Committee. During the school holidays various types of heating apparatus were compared, the presence of children being represented by four electric heaters placed on the desk which gave out a heat at the rate of 8,000 B.Th. units per hour.

Another experiment describes how a breakfast-room, which could not be made comfortable for breakfast after being heated by a gas fire burning 0.2 therm per hour for over two hours, could, after being panelled, be satisfactorily warmed with the same fire in half an hour.

Planning for Sunlight.

An ingenious piece of apparatus described in the Report is the helidon, which enables an architect to demonstrate to his clients by means of a model how sunlight will fall on a building or enter a particular room at any time of the year. The apparatus can also be used for planning streets and open spaces so as to get their maximum amount of sunlight.

Telling Good Portland Stone from Bad.

Further progress has been made with investigations on the weathering of building stones in collaboration with H.M. Geological Survey.

One hundred and fifty samples of Portland stone have been examined during the year. " Variability of structure," says the Report, " can now be expressed in quantitative terms, and it is considered possible by simple laboratory experiments to determine the quality of a sample with a reasonable degree of accuracy."

Stone Decay in Westminster Hall.

The Report records that the decay which has occurred in Ketton stone used about 1880 for the restoration of the interior of the west wall of Westminster Hall has been found to be associated with the presence of chlorides. Records have now been found of excavations made some years ago to examine the foundations and sub-soil. It is stated that " As these records show that the foundation of the west wall rests on waterlogged sand, there would appear to be little room for doubt that the chlorides have been derived from brackish Thames water which has been absorbed through the sub-soil. The localisation of the decayed areas is thought to be due to differences in the degree of contact between the Ketton stone facing and the rubble core. An attempt is being made to determine whether measurable variations in the moisture content of the wall accompany fluctuations in the tidal level of the river."

Cement.

In dealing with the work on cements, the Report states that the last few years have seen considerable advance in the rate of development of strength of cements. With the exception of permeability, this has not been accompanied by any corresponding improvement in other properties of cements which are of considerable importance.

" Thus," it is stated, " the volume changes occurring in set Portland cement concretes do not appear to have decreased, while the rate of evolution of heat on setting and hardening has increased. Although the latter may be advantageous in cold weather when dealing with thin sections of concrete, it leads in mass concrete to high internal temperatures, and consequently to shrinkage movements on ultimate cooling."

Other properties of cements are of importance from the æsthetic, if not from the engineering, standpoint. Among these are surface crazing and the production of staining and

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efflorescence on masonry and brickwork. The Report suggests that the trend in recent years in cement manufacture seems to have been dominated too largely by one factor—that of the rate of development of strength, without sufficient consideration of other properties. In co-operation with the Cast Concrete Products Association an investigation is being undertaken at the Building Research Station with a view to the general improvement in quality of cast concrete products.

Damp Problems.

The problem of the exclusion of damp from buildings still produces many inquiries to the Building Research Station, and there is every justification for the belief that this is one of the major difficulties which arise in ordinary practice. The report describes an interesting experiment which is being carried out in co-operation with the Dagenham Urban District Council in connection with the penetration of moisture through walls. There is a difference of opinion as to the merits of thorough flushing up of all internal joints in brickwork. The penetration of moisture, it is pointed out, appears to depend to a large extent on the capillary structure of the wall, and it is obvious that well-filled joints may assist in giving a continuous capillary path through the structure, whereas less complete filling might partially break this path.

To test this, three houses in course of erection were selected for experiment. The 9-in. walls of the first house consisted of red brick facets externally, with clinker bricks internally. The face joints were pointed with Portland cement and washed sand. In this house the internal joints were flushed up and the walls were plastered internally in the ordinary manner. The walls of the second house were erected in an identical way, but the internal joints were not flushed up. The two houses were finished and a hose, attached to a ½-in. bibcock full on direct from the main, was directed straight on to the wall from a distance of 3 in. Dampness showed inside the first house after 3½ hours' continuous flow, but no dampness appeared on the inner face of the second house after 5½ hours' continuous flow. In the walls of the third house the same bricks were used, but they were built as two separate 4½-in. walls bonded with brickwork reinforcement every six courses. No joints were flushed up, and, tested with the hose, no dampness appeared internally after nine hours' continuous flow. "This experiment," the Report states, "cannot be claimed to show that the walls of the second and third houses would exclude moisture under all conditions of exposure, but the advantages of a break in the capillary path are completely shown."

Waterproofers for Walls.

The efficiency and durability of treatment employed for the surface waterproofing brickwork and other building materials are being investigated both in the laboratory and upon an exposure wall to which a number of representative waterproofing agents have been applied. The test wall consists of seventeen brickwork panels of half-brick thickness, separated from each other by impermeable partitions. Various bricks and mortars are used for the different panels, and each panel is to be treated with waterproofing liquids. The faces of the various sections will be sprayed from a hose from time to time over a number of years. By noting the effect at the back of the panels during spraying, information will be gained as to the performance of the treatments. Without any treatment it has been found that water passes through the wall rapidly under the spray and makes its first appearance at the back in times varying from 25 seconds to 3½ minutes on the different sections. It was noted that in every case the water passed through the mortar joints first and subsequently spread through the bricks. In nearly every case water penetrated the sections in Portland cement mortar slightly quicker than those in lime mortar. The first six of the seventeen types of waterproofs selected are now being examined, and on one of these most of the tests have already been completed.

"The liquid," says the Report, "was applied in a single coat to porous red brick specimens by brushing. It was found to be easy to apply and produced practically no change in the appearance of the bricks. The tests showed that while the liquid, when applied to a fine-pored material such as brick, did not completely prevent the penetration of water under such conditions as would obtain during severe natural exposure, it so greatly diminished the rate of absorption that the treated surface could be regarded as waterproof. Its effectiveness would, however, necessarily be reduced in the case of materials of a coarser texture, or those which are liable to contain flaws or crevices, such as may occur in ordinary brickwork.

Acoustics of Buildings.

Conjointly with the National Physical Laboratory, advice has been given to the League of Nations regarding the acoustic properties of designs for the new League of Nations Assembly Hall at Geneva. After discussion with the League's architects, one of three designs has been recommended as the best acoustically. The Hall of Justice of the International Court of Justice at The Hague has also been inspected and a Report on it prepared.

"Several requests," the Report states, "have been received by the Station for advice on the acoustic design of halls and other rooms intended for public speaking. School assembly halls, court rooms and board rooms are examples of the type of work considered. It has been found that these problems could be most easily dealt with in consultation with the architects for the buildings, and perhaps most conveniently when the design of the rooms has reached the stage where details of the general lay-out and accommodation required have been decided. There are two main points to be considered in buildings of this kind; firstly, the shape of the room and disposition of the audience and speaker, and, secondly, the properties of the room in respect of reverberation. Barrel-vaulted and domical ceilings in particular may be troublesome if the centre of curvature falls at or near floor level, since there will be a tendency for sound reflected from the ceiling to be focused amongst members of the audience in such a manner as to give rise to a sharply defined echo. The period of reverberation can be adjusted by the introduction of more or less absorbent lining materials. It is not always recognised that the audience itself provides a very high proportion of the total sound absorption in many halls. As a result of this, a hall may be entirely satisfactory with a full audience, but with a small audience it may be unduly reverberant."

Keeping Noise Out of Buildings.

The subject of the sound insulation of buildings is an important problem. One matter to which attention has been given during the year is the transmission of sound through windows. "It is a matter of common observation," the Report remarks, "that although elaborate and expensive treatment may be applied to prevent sound transmission through partitions and floors, yet in a city a great deal of noise will penetrate through the windows." The conclusion reached in the Report is that "to obtain really good sound-insulating properties in the windows, it would be desirable to employ double glazing in separate and dissimilar rigid frames, the thicker the glass and the smaller the pane, the better. If a double frame is out of the question, then reliance might as well be placed on single sheets, of as great a thickness as is reasonable, and a rigid frame."

Civil Engineers of Ireland.

The transactions of the Institution of Civil Engineers of Ireland for the 95th session to May, 1931, have now been issued from 35, Dawson-street, Dublin. In addition to giving details of Institution matters, a number of papers of interest to the civil and municipal engineer are included.

"NEW HOMES FOR OLD"

Opening this section of the Building Exhibition at Olympia, on Wednesday last, Sir Raymond Unwin, P.R.I.B.A., said they had reason to be grateful to Miss Denby and the band of devoted helpers who had worked under her chairmanship to provide it. He welcomed its inclusion, for it signified a recognition not only of the intrinsic importance of the subject illustrated, but also that the building industry was concerned with the problem, and realised its responsibility to try to solve it. If anyone should be under the delusion that the housing problem had been solved, he had but to study this exhibition to be undeceived. Much had indeed been accomplished towards making up the arrears of building due to the great war; but here in London we seemed barely to keep pace with the increasing number of families, and little progress indeed could be shown towards improving slum conditions.

The 1931 Census showed that in the Greater London Region the separate families or units there recorded outnumbered the structurally separate dwellings by 592,364. More serious still, that deficiency was greater by 50,120 than it was in 1921. In the more limited area of the County of London, the number of structurally separate dwellings available per 100 families in the 1931 Census was only 63, as compared with 64.25 in 1921. This in spite of the reduction in population. It was true that the size of the family unit had diminished, but the reduction was in young children, and the adult population had actually increased in number. It was disconcerting to find in the Census Report that only 36.7 per cent. of the families living in the County of London enjoyed what was too often assumed to be the ordinary advantage of the single occupation of separate premises to live in.

The character of some of the human warrens one might see there; the remedy in replanning the areas, disentangling the incongruous uses, and building new and properly separated dwellings, was also illustrated there. He commended that contrast to their study, and asked them to consider what was to be thought of a great and wealthy people who were constantly astounding the world by the wonder, the ingenuity and the magnitude of what they could accomplish, who, nevertheless, allowed those slum conditions to continue, while maintaining in enforced idleness over a quarter of a million of men having all the qualifications needed to apply the remedy.

The exhibition was directed to establish three main points: (1) The urgent need for slum clearance and rebuilding work; (2) the importance of good design and of the provision of amenities in connection with all new homes. As to that, he would only say that in that work particularly it was true to say that it was not done at all unless it was well done; (3) the necessity for some form of subsidy to enable the minimum decent accommodation to be provided at rents within the means of a large section of the people. As regards that last point, he would urge that while alternative forms of assistance might yield results of greater or less economy, and preference might rightly be given to the more economical, he trusted that past disastrous mistakes due to the assumption that assistance to housing could be dispensed with would not be repeated.

In view of the serious diminution which had recently taken place in the number of houses under construction, and apparently also in the number being arranged for, a very serious responsibility would be incurred by anyone who initiated steps which would tend further to retard the solution of our housing problems, or to increase the difficulty of removing the disgrace of our slum areas.

THE BUILDING EXHIBITION: OPENING CEREMONY

THE Building Exhibition at Olympia was formally opened on Wednesday afternoon by the Rt. Hon. W. G. A. Ormsby-Gore, M.P., First Commissioner of Works, when the chair was occupied by Sir Raymond Unwin, P.R.I.B.A. Among those present were :—

Sir Edwin Lutyens, Sir Brumwell Thomas, Sir Henry Tanner, and Messrs. A. J. Davis, Alan E. Munby, Arthur Keen, E. G. Culpin, Hubert Lidbetter, Gerald Warren, Darcy Braddell, W. A. Pite, G. J. Skipper, Bernard Dicksee, E. J. Sadgrove, Francis Hooper, Hardy Sims, G. Topham Forrest, Philip Dales, E. J. Carter, E. J. Brown, A. B. H. Colls, Dr. R. E. Stradling, W. J. Rudderham, George Hicks, R. Coppock, G. B. J. Athoe, W. T. Plume, T. P. Bennett, W. E. Riley, F. H. Finlaison, A. H. Adamson, C. E. Elcock, A. Thomas, G. Grey Wornum, E. Maufe, P. H. Adams, H. V. Milnes-Emerson, and H. Greville Montgomery.

Sir Raymond Unwin said the building industry, and the public whom it served, owed a deep debt of gratitude to Mr. Montgomery for the zeal and skill with which he organised once every two years the Building Exhibition. It was a great service well performed.

He was particularly grateful for the inclusion of a special section dealing with housing conditions and slum clearance, a problem which intimately concerned the building industry; also for another exhibit which illustrated the very valuable effort being made by the Society of Friends and others to relieve the pressure and some of the misery of unemployment which was only too prevalent in all sections of the building industry. Though our difficulties as an industry had seldom been greater, he was glad to think that we were facing them in a spirit of unity more complete than ever before. Having referred to the work of Mr. Sydney Tatchell, Sir Walker Smith, Mr. Bossom, Mr. Maurice Webb and many others in promoting the efficiency of the industry and increasing its service to the community, the speaker referred to the formation of the Building Industries National Council. Representatives of the chief organisations, he said, who could speak for all the sections, had decided that the time was ripe for this step. At a meeting last week a draft constitution for that Council was unanimously approved, subject to a few mainly drafting amendments, and all those present undertook to recommend their respective bodies to ratify the constitution and adhere to the national body. He had every hope that within a few weeks we should have a body entitled to speak for the industry as a whole, and determined to promote its welfare, by raising the standard of its service to the community, and promoting the most efficient co-ordination of all its sections. He spoke for all when he said that we were determined that the permanent record of our life which the building industry inscribed on our country should in the next generation present a more creditable and more inspiring picture than those which recent generations had left. The slum areas of our towns, which were a disgrace to us, must be cleared and rebuilt. The desecration of our beautiful countryside by ugly or incongruous erections must cease; and many out-of-date and inefficient buildings which obstructed the advance of industry or commerce must be replaced. All this, he was convinced, was well within our powers as a people, and would be accomplished as that great industry increasingly realised the contribution it had to make to our common life, and the responsibility which, collectively, it must take for the character of that contribution. One of the first tasks already being undertaken by the Joint Committee who were promoting that National Council was to bring home to the public, and to the Government, the important part which the building industry played in our economy; and the essential contribution which its continued activity could best make to the revival of industry generally. Building was peculiarly a home industry, using mainly materials found and made at home. It distributed widely among the people in the form of purchasing power, practically the whole of what was spent; while at the same time it added to the permanent capital of the country a revenue-earning asset of equivalent value.

The First Commissioner of Works (Mr. W. G. Ormsby-Gore, M.P.), after formally declaring the Exhibition open, said that the nation was passing through one of the greatest crises in history. In the last three years, building, like all other trades, had received a setback, but hardships had not deterred the industry from great efforts. The largest number of stands on record at the Exhibition, and the high quality and novelty displayed, showed that, in spite of bad times, the building trade was determined to go forward. Never had the stands been better designed or more pointful in style. As regarded housing, he was glad to think that to-day few people were beyond a degree badly fed, but housing left a great deal to be desired. Yet wonderful progress had been made as compared with other countries. One million new houses had been built since the War with Government grants to the extent of £110 millions, and at July 31 of this year 30,000 houses were under construction with Government assistance, and another 25,436 had been authorised but were not yet in hand. That, of course, did not include houses built by private enterprise.

In connection with the Exhibition, he would specially like to draw attention to the exceptional beauty and durability of the all too-little-known Empire woods which were shown on some of the stands. Producers of every known commodity had contributed their bit to the usefulness of the Exhibition, but the most important man was the building owner. To the latter, especially, the Exhibition was useful, and he (the Commissioner) hoped that the inquiries of the building owner would result in a greatly increased internal trade.

Since 1895, when Mr. Greville Montgomery had taken over the Exhibition and cleared out the shooting galleries and sweet booths, the Exhibition had gone from strength to strength, until now even the huge size of Olympia would not contain all the firms that wished to be represented. It was a display which no progressive architect could afford to miss if he wished to keep up with modern progress. Every class of material for every purpose was on show. One special feature of the show was the "New Homes for Old"; he had been also impressed with the displays of the schools and City Companies.

He had one word to say to those firms who wished to sell their products to the Government. All British products were considered on their merits, and in that work the Government was well served by their departments, especially the Department of Scientific and Industrial Research. The useful part that Department played was shown by the fact that the increasing volume of requests received by the Building Research Station for tests on the properties of materials, both old and new, had caused special consideration to be given to the arrangements in force. The requests were broadly of two types: firstly, a whole series of tests selected with a view to enabling a report to be furnished on general suitability; and, secondly, single tests only. With regard to the first type, it was considered that the furnishing of such reports was one of the most important functions of the Station. As regards the second, it had been the practice of the Station, wherever possible, to refer the applicant to independent consultants. So numerous were those requests that a scheme had been formulated, with the help of the Institution of Civil Engineers, the R.I.B.A., the Institution of Mechanical Engineers, the Institution of Structural Engineers, and the Institute of Chemistry, for the Building Research Station to refer individual tests to approved testing houses, the results of which would be incorporated in certificates issued by the Station. In order to safeguard the positions of the testing houses and of the departments, a committee of presidents of the five institutions named, with Sir George Humphreys as chairman, had been appointed to (*a*) act as Standing Advisory Committee, (*b*) to decide upon applications received from independent testing laboratories for inclusion in the B.R.S. list of approved testing laboratories, and (*c*) to consider and report to the department upon questions raised by such approved laboratories and the B.R.S. and in the working of the arrangements.

Amongst the duties imposed upon him as Commissioner, the most unpleasant had been that of dispensing with the services of employees owing to the reduction in the number of works carried out by his department, due to the need for Governmental economy. Such economies could only be carried out by causing sacrifices which fell first on the servants of the Crown. Similarly, many firms were obliged to dispense with employees, and the work of many architects was very slack. For that reason, he was glad of the effort being made in connection with the Exhibition to assist the Architects' Unemployment Relief Fund, which he trusted would receive the fullest possible support.

Mr. Wm. J. Stewart, M.P., President of the London Master Builders' Association, having proposed a vote of thanks to Mr. Ormsby-Gore for his great kindness in coming to declare the Exhibition open, said the building and allied trades employed probably over 2,000,000 operatives, and they all felt that an injustice had been and was being done to the industry by the attitude which the Government had taken. They did not object to economy, but they did object to their industry being singled out as the only one to which objection had been taken in regard to spending money.

Mr. Thomas Barron, seconding the vote of thanks, said they were grateful for the presence of the First Commissioner of Works, but how very much they would have liked to be able to express their gratitude for an indication by him, as a member of the Government, that there would be a little relaxation of some of those restrictions which were unfortunately preventing them from utilising to the full the great instrument they had in the organisation of the building industry for quickening and reviving industry generally. In this country there was no industry more than theirs which was capable of being developed and expanded, no industry which was more widespread in its reaction for good on the many other industries with which it was directly or indirectly connected. They were told that 80 per cent. of the cost of the products of the industry was represented by wages and salaries which, if the workers were fully employed, would put into weekly circulation a sum of £3,474,900. The finished product of the industry constituted not only national value as real estate, but also provided the Government and local authorities with the chief basis of our system of taxation. With a knowledge of these and many other factors which might be adduced to show the importance of the industry, it was most alarming for all who might be seeking a way out of the morass of depression that had engulfed industry generally, to find that actually we were approaching a state of paralysis. In the demand for economy we found the most indiscriminate abandonment of work of the utmost public importance and of vital necessity to the nation, so that, at the moment, almost one-fifth of the total male unemployed were in the building and public works industry. They felt that much of what might be called panic restrictions and closing down of such work, had been done under a serious misapprehension as to the implications surrounding the industry, and they welcomed, therefore, this renewed opportunity of displaying their wares. They believed that by friendly consultation and co-operation they could make the industry still more fit to fulfil its great part in a reconstructed world.

NOTICES OF EXHIBITS

We gave in our last issue a plan and complete list of exhibitors at the Building Exhibition. Below we give detailed notices of some of the principal exhibits. The letter which appears after each firm's name refers to the Row and the figures to the stand. Further notices will be given next week.

The Adamite Co., Ltd., G.138.

This stand has been designed by Mr. Laurence M. Gotch, F.R.I.B.A., and presents a threefold "Atlas White" exhibit—terrazzo slabs, treads and stairs in varied colourings and designs, an octagonal terrazzo column showing eight different colours of "Biancola," constructed by Messrs. Art Pavements and Decorations, Ltd., and "Atlas White" stucco applied to "Bricanion" lathing, of which material the stand is constructed. "Bricanion" has been in use for sheets, with half-timbered effects. The end gables demonstrate the effectiveness of "Poilite" rough-cast sheets. The application of "Poilite" asbestos-cement louvre blades is shown in the jack-roof. All guttering, etc., on the building consists of "Everite" asbestos-cement rainwater goods and "Everite" soil pipes are also exhibited. The interior of the main building shows the excellent effect now obtainable by the use of "Turnal" oak-grained asbestos panels and sheeting, Tudor and Georgian designs being

The Adamite and Redalon Stand.
MR. LAURENCE M. GOTCH, F.R.I.B.A., Architect.

over thirty years. It consists of woven steel wire netting covered with clay brick crosses, which not only allows a mechanical bond, but also yields a suction bond between the plaster and brick crosses. During manufacture "Bricanion" is baked at a temperature of 900 deg. C. This baking process coats the wire with a film of oxide, eliminating the possibility of rust or corrosion due to the action of plaster. Miniature exhibits are shown demonstrating the "Bricanion" method of construction for solid or cavity partitions and suspended ceilings. Exhibits of non-slip stair and floor surfaces made from "Alundum" in the nine colourings obtainable are shown, and "Colemanoid," the liquid waterproofing and hardening compound for concrete of all sorts, is also presented by means of photographs illustrating a few of the more interesting jobs in which the material has been successfully employed. "Atlas White" non-staining Portland cement is also exhibited.

Asbestos Cement Building Products Ltd., G.134 and 135.

Examples of the application of the many well-known asbestos-cement materials are here shown, and demonstrate the developments that have taken place in recent years. Particular attention is drawn to the "Poilite" Newtone asbestos-cement slates, from which it will be seen that a great advance has been made in colour tones for roofing work. Other roof surfaces exhibit "Turnall" Trafford tiles, "Everite" "Big-Six" corrugated sheets and "Poilite" pantiles. The outer walls of the main buildings are covered with "Everite" standard corrugated sheeting and "Poilite" flat shown. The four cubicles have been designed to demonstrate the various decorative walling sheets, bathroom fittings, etc., now available.

Austins of East Ham, Ltd., O.252.

A wide selection of standard joinery, mouldings and doors is here shown. The firm have recently added the "Stormproof" window to their range of products. Five interesting features of these windows are as follow:—(1) A patented lip covers the space between window and sash, and allows clearance for the swelling and shrinking. (2) Transome and head moulding (both tongued in) keep water off the window. (3) Both frame and hung sashes are grooved, as an added protection against the penetration of moisture. (4) New method of laminating and screwing of corner joints gives greatly increased strength. (5) The hinges are rust proofed and of special patent design; they are specially strong, and are fitted with 8 screws in lieu of the usual 6. Another exhibit is the "Combidor Doorobe"—a wardrobe and a door in one. The standard size of the door is 2 ft. 6 in. by 6 ft. 6 in. by 1½ in., with the cupboard portion fixed centrally in place of the usual panels. It is fitted with a rod for coat hangers. Another standard pattern is the cupboard portion only, which can be fixed on to any door already hung.

Bakelite Ltd., Gal. 67.

"Bakelite" synthetic resin products, including moulding materials, insulating varnishes, lacquers, cements, spirit and oil soluble resins, laminated sheet, rod and tube, silent gear material are manufactured by this company. The applications of "Bakelite" materials in the building industry have greatly increased during the past few years, and an interesting display of articles made from these materials is on view. Of particular interest, is the new covering material for walls, table and counter tops, etc., *i.e.*, "Bakelite" laminated, a material which possesses unusual properties of considerable interest to builders and architects. Various designs in "Bakelite" moulded door knobs and fittings are also exhibited. Attention is also drawn to "Bakelite" oil soluble resins, which are used in the manufacture of high-grade varnishes, lacquers and paints, where extra durable, rapid drying and high glossy finishes are required.

Bryce, White and Co., Ltd., H.144.

On this stand there is an attractive display of doors and mouldings, as follows:—

Doors: "Castle Brand" first quality, made of thoroughly well-seasoned Swedish redwood, morticed, tenoned and wedged. These are stocked in dozens of designs for exterior and interior use and in all the standard sizes. "Red Cone" Western Pine: These doors are stocked in distinctive patterns and in many sizes. The timber used in their construction is specially selected for the beauty of its grain and freedom from defects. The panels are of rotary-cut figured plywood. "Brycite" Columbian Pine: These can be supplied from stock in a wide range of attractive designs and sizes "Brycite" oak: British-made in the firm's joinery shops. Many attractive designs for front doors are shown, and quotations will gladly be given for making special designs and sizes.

Mouldings: "Brycite" mouldings are manufactured from White Sea and first-class Swedish timber, but can be supplied in hardwoods where desired. Special designs can be worked in the firm's mills in London, Southampton, and Bristol at short notice. The firm also hold large stocks of garage doors and gates, kitchen dressers, chimneypieces, turnery, trellis, oak flooring, matchings and joinery in their warehouses.

A. A. Byrd and Co., D.58.

A number of full-size set-ups of "Metaform" straight wall forms are shown here, together with various specially designed steel plates which have been actually supplied to mould special forms in concrete construction. One exhibit shows a 6-ft. length of shuttering for a retaining wall, including a specially designed "double-radii" coping mould with 6 ft. 6 in. splay units to give the fillet at base, as supplied recently for a county council retaining wall. On the reverse of this wall are displayed examples of white and coloured cement brush grouting work mixed with Messrs. Byrd's waterproofing mediums. Various other useful types of cement treatments which can be done are also to be seen, together with a working model demonstrating the resistance to wear of treated cement surfaces as compared with untreated slabs. Practical demonstrations are also given showing the sealing of water percolations with the company's S.3 rapid-setting medium.

The Cable Makers' Association, S.294.

Intended to be generally representative of the various types of cables used in electric light and power installation, this is a joint exhibit prepared by the Cable Makers' Association, the members of which are as follow: The Anchor Cable Co., Ltd.; British Insulated Cables, Ltd.; Callender's Cable and Construction Co., Ltd.; The Craigpark Electric Cable Co., Ltd.; Edison Swan Cables, Ltd.; The Enfield Cable Works, Ltd.; The Greengate and Irwell Rubber Co., Ltd.; W. T. Glover and Co., Ltd.; W. T. Henley's Telegraph Works Co., Ltd.; The India Rubber, Gutta Percha and Telegraph Works Co., Ltd.; Johnson and Phillips, Ltd.; The Liverpool Electric Cable Co., Ltd.; London Electric Wire Co. and Smiths, Ltd.; The Macintosh Cable Co., Ltd.; Pirelli-General Cable Works, Ltd.; Siemens Bros. and Co., Ltd.; St. Helens Cable and Rubber Co., Ltd.; Union Cable Co., Ltd.; Standard Telephones and Cables, Ltd. Rubber

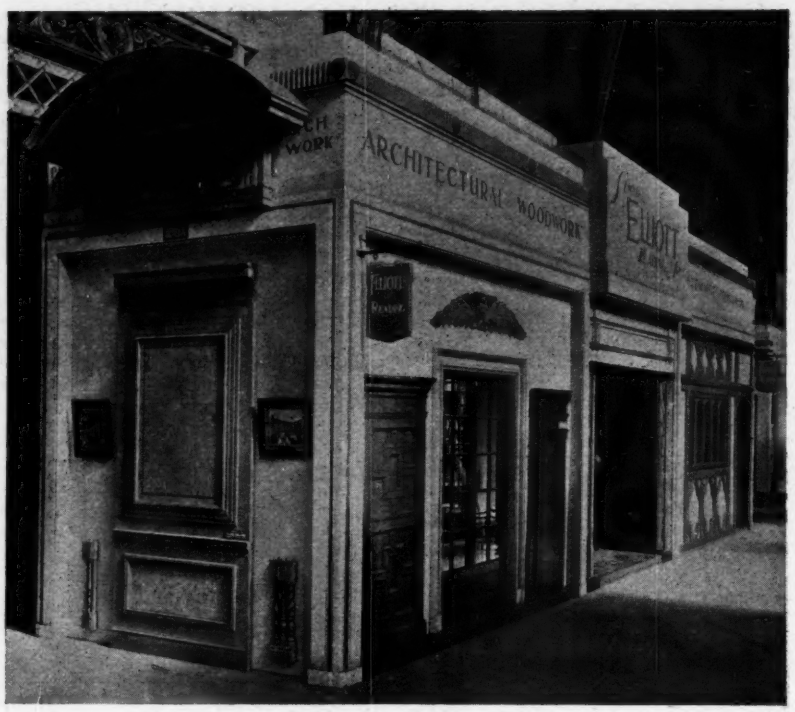
insulated cables with various metallic and non-metallic protective coverings, in single core, concentric and multicore types, special systems of wiring for houses, both in conduit and protected surface wiring systems, as well as cables for street mains, factories and power transmission in various types, insulated with paper or bitumen, armoured and unarmoured, are shown.

George M. Callender and Co., Ltd. Row D. 61.

This firm is exhibiting examples of sheeting, dampcourse, paints, roofing and cement materials. The Callendrite sheeting is a waterproofing medium used for storage reservoirs and various sewerage works. On the stand is a fish pond in brickwork, lined throughout with this material. In the centre of the pond is a column of loose porous bricks, specially dampcoursed with the company's own preparation. Many other exhibits are to be seen, including a wall, one portion of which is treated with "Protex" a material for keeping walls dry, while another portion shows the "Protex" applied to plaster and papered over. Among other materials to be seen on this stand are the "Veribest" ready roofing; "Bitufelt," a roofing felt; "Bitubond," a building composition, and "Plastaleke," an asbestic-bitumen cement material.

Carter and Co., Ltd. F. 107.

The Carter Tile stand has been designed by Messrs. Stanley Hall & Easton and Robertson. While cheerful and bright in colour and attractive in its form, as befits an exhibition stand, it is designed to be of real use to the tile user. Though the walls have been used in some instances as, what might be called, sample boards, new glazes, new textures, new sizes, are shown in sufficient quantity and in such a manner as to give an idea of their value in the mass. The central feature of the stand is a structure interesting in itself, showing the many different ways that are available for dealing with the internal and external angles of wall surfaces. The tile "theatre" shows a large number of wall tiling schemes in an orderly and practical manner. The new Carter tile rigid partition will be welcomed by architects and is definitely a thing to be seen. The main floor is in Carter terrazzo tiles with strips of floor tiles inset, and the steps are of pre-cast Carter terrazzo. The possibilities of tile and faience lettering are shown in several instances.



Messrs. Samuel Elliott's Stand.

Clay Industries (Salt Glazed), Ltd., P.266.

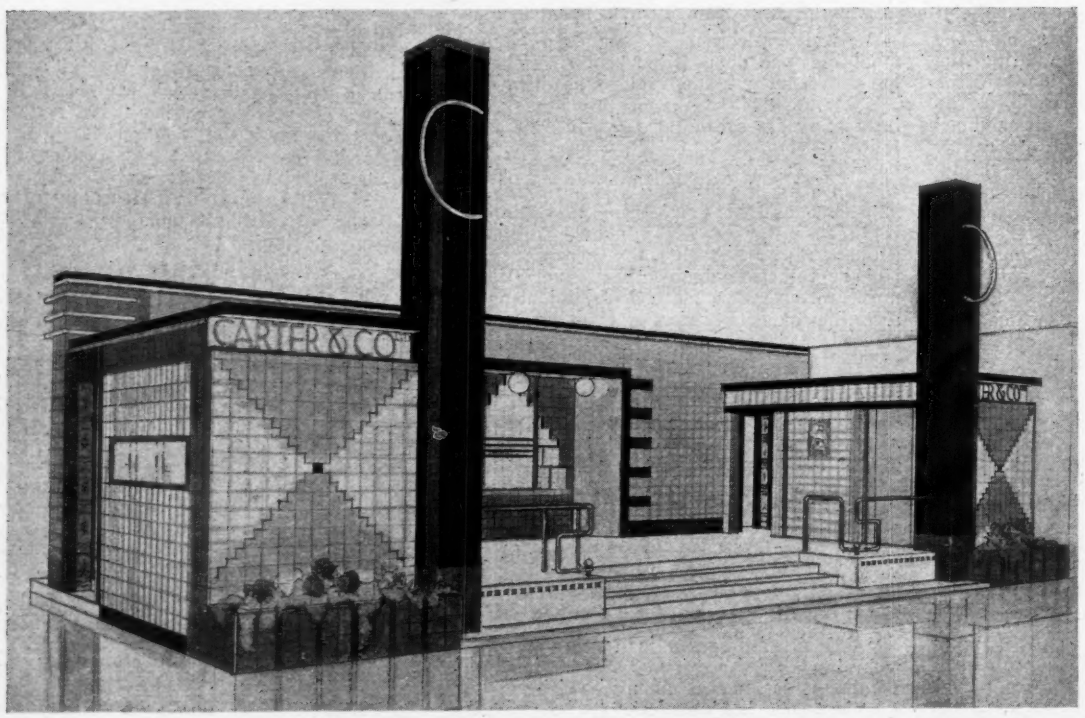
This stand is of a very original design, taking the form of a building of drain pipes grouped together. As it is impossible to show samples of the salt-glazed stoneware pipes and fittings made by all the firms comprising Clay Industries (Salt Glazed), Ltd., none of the actual material made by this firm is exhibited. The stand is rather in the nature of an information bureau, at which technical data, prices, delivery and so forth can be obtained by all interested in drain pipes. The stand has been designed and erected by Messrs. Drytone, Ltd., and consists of a central pavilion, apparently composed of mammoth drain pipes, the interior being cleverly fitted up to serve as an office.

Cookers and Geysers, Ltd., P.259.

How to obtain hot water by gas as and when required is interestingly demonstrated on this stand by the following apparatus:— The "Ascot" white porcelain enamelled multi-point gas water heaters, type Nea, supplying hot water to bath, basin and sink, instantaneously and in any quantity, simply by the turn of a tap. These heaters answer the need for constant hot water supply to the house, by an easy, clean and economical method, and are cheap to instal and to maintain. The "Ascot" automatic sink water heater, type R.12, is fixed in place of the cold water tap over the sink, and supplies hot, cold or tepid water instantaneously and at will. The "Ascot" automatic storage water heater, type A 3/6, is specially designed for hairdressers, doctors and dentists. The "Ascot" bath geyser, type R.25, and the "Perfecta" automatic temperature regulators, are other interesting exhibits.

Samuel Elliott and Sons (Reading), Ltd., J.174.

Messrs. Elliotts are showing a stand designed for the purpose of containing their different classes of manufactures, which has necessarily resulted in an architectural treatment subservient to this purpose. It is, therefore, somewhat classical in treatment. The columned entrance leads to a central lobby, on the right hand of which is an oak-panelled room with ingle seats, stone fireplace, and oak staircase with twisted balusters. The ceiling beams are of great age, having been recovered from the bed of the Thames when old Caversham Bridge was rebuilt. The floor is of elm boards of irregular width. The room on the left is panelled in yellow pine of early Georgian character. The floor is covered with oak parquet. Special attention is drawn to the central lobby, which is floored with a new



Messrs. Carter & Co.'s Stand.

MESSRS. E. STANLEY HALL AND EASTON AND ROBERTSON, FF.R.I.B.A., Architects.

idea in spring dancing floors, called Elliott's patent "Spring-Mor" floor. In the central lobby are also specimens of panelling, flush-faced doors, etc. The exterior panels of the stand are fitted with exhibits of photographs and specimens of their interlocking rail system panelling in oak and other Colonial woods.

Elsan Manufacturing Co., C.37.

A comprehensive range of models of the Elsan Chemical Closet are on view, including both the portable and permanent systems, and catering for all possible sanitary requirements where public sewerage service is not available. Portable models of the Elsan chemical closet have been considerably improved in many respects. A useful and important feature for more hygienic service being provided in the special urinal collar now fitted in each type. The new Elsan self-flushing portable model has all the advantages of the flush closet, a specially designed automatic flush pan being used which also prevents splash. Other exhibits of this firm are the overground model for sanitary service in private houses. This model can be fitted on upper or ground floors, and the contents are automatically discharged into a soakaway when the outlet valve is lifted. The underground tank models are considerably improved in the internal movement and design of the porcelain pan.

Ewart and Son, Ltd., K.183.

Several new types of geysers are here exhibited. The continuous flow, automatic "Vivo" water heater is of special interest; no storage is necessary, and an unlimited supply of hot water is guaranteed to any tap in the house at any hour of the night or day. The "Victor" geyser de-luxe, with hard fired porcelain enamelled case, is of attractive finish and appearance. For a hot-water service to kitchen sink or lavatory basin the "Allhot" container type of water heater can be recommended; and the "Storit" three-cornered bath heater to fit any corner space fills a real need. The firm are also exhibiting samples of their well-known all-copper ventilators, and the "Emperor" smoke cure—"the cowl that cures." Anyone troubled with a smoky chimney should make a point of seeing this. A special feature of the exhibit is the example of the firm's well-known conical system of copper roofing, which ensures watertightness. The system has recently been used to cover the Bodleian Library, Oxford, and many other important buildings.

The Expanded Metal Co., Ltd., G. 141.

This exhibit consists of specimens of various meshes and weights of "Expamet" expanded steel, which are applied to innumerable purposes. "Expamet" expanded steel of the larger meshes is used chiefly as reinforcement for all forms of concrete and fire-resistant construction; and the smaller meshes in many other ways, such as open meshwork for partitions, shop divisions, fencing, flooring, etc. "BB" expanded metal lathing and "Ribmet" are shown in actual use for solid and hollow plaster partitions, constructed on both timber studs and the company's own steel channels and spacers. "BB" expanded metal lathing can be used for practically any type of plaster construction; it affords a level and rigid mesh-work surface to which plaster can be applied quickly and easily. "Ribmet" is a ribbed metal lathing which affords an excellent ground for plaster in ceilings, partitions, etc., where the bearers are too far apart for plain sheet lathing, and it is particularly useful as a combined permanent centering and reinforcement for concrete flooring, roofing, etc. Other exhibits include a model which incorporates various "Expamet" expanded metal products in relation to their respective applications in building construction, and a display of expanded metal domes, designed and patented by Sir Edwin Airey, of Messrs. William Airey and Son (Leeds), Ltd., for whom they are manufactured by the company.

Frigidaire, Ltd., P.265.

Messrs. Frigidaire, Ltd., are exhibiting a wide range of refrigerators to suit houses and flats of all sizes. They are also demonstrating the development of their compressor from the original single-cylinder type of seven years ago to the super-powered, twin-cylinder compressor in use to-day. Actual components of the machine are shown, and inspection reveals the quality and precision of workmanship put into the plant. The firm have equipped many new buildings recently, including Witley Court and Queen's Court, Bayswater, with 133 cabinets working from four compressors. Frigidaire installations can be of the self-contained type (*i.e.*, each with a storage compartment and its own compressor) or on the multiple-unit principle, having a large number of cabinets working from one centralised plant. The models on the stand are all of the former type, although full particulars of the multiple system are available. The firm have engineers with specialised knowledge of building requirements, and visitors are invited to discuss their refrigeration problems.

General Electric Co., Ltd., T.308.

This stand of the General Electric Co., Ltd., is a striking one and surmounted by an imposing fascia, "Electricity in Modern Building." It is divided into a number of sections in which electrical working apparatus, appliances, fittings and accessories are displayed covering a wide field of domestic and industrial utility, and therefore of special appeal to modern architects and builders. The exhibits include Magnet industrial cooking equipment for hotels, restaurants, etc., as well as smaller cookers for domestic use. Electrically operated storage water heaters, which have become a standard item in the electrical equipment of labour-saving houses, are also on view. Architectural systems of modern electric lighting for the interior and exterior of private or public establishments, consisting of lay and panel lighting systems and indirect and decorative methods of architectural illumination are also demonstrated. The decoration, illumination and furnishing of two reception rooms will be a special feature of this stand. The general scheme of decoration allied with the lighting has been designed by Mr. Oliver P. Bernard, L.R.I.B.A., and embodies a number of distinctly artistic features.

Greenwood and Hanson, K.203 and 204.

The principal exhibit of this firm is the Anti-Vak Trap. In these traps air is conveyed through the inlet to the outlet end to equalise the difference in air pressure created by syphonic action. When these traps are fitted anti-syphon pipes are unnecessary. The traps have a round, self-cleansing bore, in addition to a very efficient horizontal compensating chamber, and integral by-pass air pipe. The compensating chamber, without the aid of the by-pass pipe, ensures a constant seal on syphonic "pulls" that are not exceptionally severe. The by-pass pipe is provided to ensure a constant seal on very severe syphonic "pulls." When submitted to severe "pulls" the water falls in the inlet leg, when both air and water are drawn through the air pipe with great force, keeping the air pipe clear. When the "pulls" are insufficiently strong to ensure a clear air pipe, the air is drawn under the "U" portion of the trap, and the water is retained in the compensating chamber until syphonage ceases, and then falls back to reseal the trap. An interesting display, which architects and sanitary engineers should see.

Halliday Boilers, Ltd., G.130.

This firm of boiler makers is exhibiting a boiler working. The boiler is white enamelled, with a tank fitted to a bath. A boiler fitted to radiators and also working is to be seen. The other exhibits include single boiler for fitting as auxiliary to kitchen range or coke boiler for summer use; a large boiler for hotel or commercial use; a chromium-plated boiler and tank; and a number of various coloured enamelled boilers.

Messrs. Robert Boyle and Son are also exhibiting on this stand by showing a large copper ventilator for public building or church; a factory ventilator; a general purpose ventilator; a ventilator for farm or cow-sheds, and various types of inlet ventilators, together with a positive down draught preventing chimney cowl.

G. A. Harvey and Co. (London), Ltd., L.212.

Among the exhibits on this stand is an array of ventilators and steel equipment, including steel shelving, storage bins and racks. Perforated metals, one of the specialities of this firm, are represented by screens and screen plates suitable for gravel, sand and ballast, also cement machinery

A Harvey "Scot Cowl."

plates, and woven wire cloths of all meshes and gauges. Also to be seen are examples of wire window guards of every design. Mild steel tanks, cisterns and cylinders are also being shown, as well as gutters from 18-gauge material to $\frac{3}{8}$-in. plate, with a choice of designs to suit most requirements. Corrugated bends of all sizes and dustbins of the standard "Harco" quality are included.

Honeywill and Stein, Ltd., Q.273.

"Gyproc" fireproof wall and ceiling boards are the exhibits of special interest on this stand. "Gyproc" is a fireproof product made of pure gypsum, and has a smooth surface which will take any form of decoration. The firm have devised a special method of securing permanent flush joints so that a perfectly flat surface can be obtained. We understand that considerable quantities of the product are being used regularly by stand fitters, in view of the regulations which now require stands to be constructed of non-inflammable material. One form of the material has the appearance of a high-class wood, but costs little more than wall-board. It is in big fireproof panels finished in richly grained walnut, gumwood, or whitewood. Any handy carpenter can put it up over existing walls or over studs and joists in new construction, all in a few hours. This wood-grained "Gyproc" is sized in the factory, and is ready for waxing or varnishing, or can be left in the natural soft graining of gumwood, whitewood or walnut. It is supplied in one thickness, $\frac{3}{8}$ in.; one width, 32 in.; and in 6, 7, 8, 9 and 10 ft. lengths. Only the outer edges are nailed; no nailing down the centre of the board is necessary. There are obviously many uses for this fireproof material, which is a bad conductor of heat and cold, and has the advantage of being ready for decorative treatment immediately after erection.

Hurry Water Heater Co., K.187.

This firm is showing a range of "Dual Purpose" gas coppers, which serve both as

a high-quality copper and also provide one of the most economical means of supplying hot water to a ground floor bathroom—and the "Magic" "Hurro" circulator and the "Hexabon" heater. These last are robustly constructed in a stainless alloy and designed for ease of fitting, ready accessibility at all times, and provide an efficient and economical auxiliary or substitute for a solid fuel boiler for domestic hot water supply or for heating systems, with the additional advantages of full automatic control at low cost. These circulators are now incorporated in the "Hurro" Domestic Cabinet, which consists of a hot-water storage cylinder of up to 50 gallons capacity with a circulator coupled directly to it of any of the following sizes:—10, 20, 30 or 60 cu. ft. per hour. This unit is heavily lagged and enclosed in an attractively finished case, which incorporates a special airing cupboard of ample size. Another new feature is the "Forward" storage heater, which is a self-contained unit burning only 12 cu. ft. per hour and providing hot water to all parts of the house, automatically controlled.

Hyder and Sons, B.5.

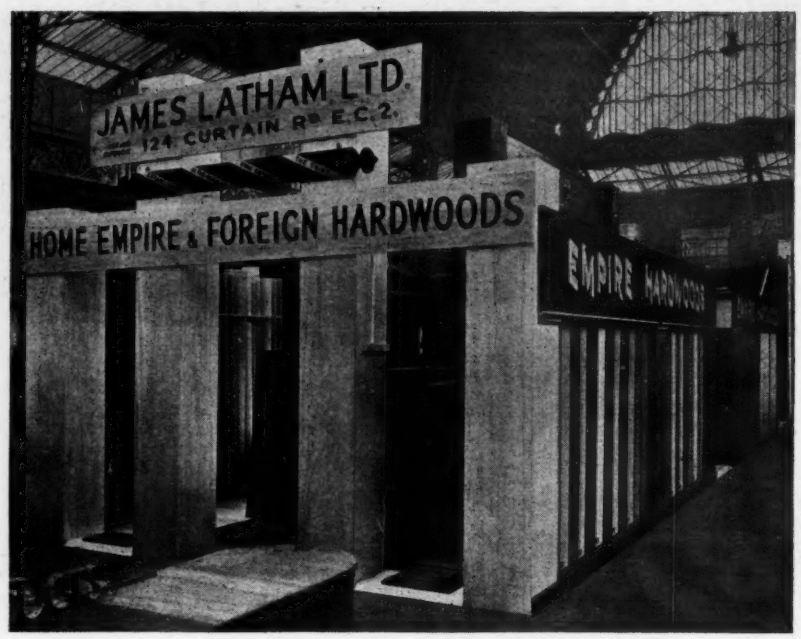
Hand-wrought ironwork of ancient and modern architectural designs is the feature of this exhibit. Those particularly interested in old restoration work and "Tudor" style of building should make a careful survey of the artistic reproductions of early lanterns, door knockers, latches, hinges, firedogs, firescreens, basket grates, etc., and builders' fittings of all descriptions, which can add a fascinating and beautiful touch to the house. Special attention is called to the old-fashioned fireplace completely fitted up in early style. Other interesting and special exhibits consist of electrical fittings of all types. An eagle (with

A Hyder Weather-vane: "The Golden Hind."

open wings, which would make a reading lectern) is entirely hand-carved in iron and worthy of note. We illustrate a well-wrought vane in copper on wrought-iron, in the form of a galleon, "The Golden Hind," specially made for Mr. Arthur Mee.

T. C. Jones and Co., Ltd., R.287.

Cranes, diaphragm pumps and petrol engines form the principal exhibits, and here the standard cranes, of which both a trench



Messrs James Latham's Stand.

crane and a mast crane of the "perfecto" type are shown, are fitted with a 3 h.p. air-cooled petrol engine of British manufacture, but in order to show the cranes in operation at the exhibition, the petrol engines will be replaced by electric motors. The cranes are controlled from the front by means of one lever, which operates the lifting motion and the brake gear. With a front control, the operator has a full view of the load as it is raised in the trench. Also to be seen are two T. C. Jones 3 in. petrol-driven portable diaphragm pumps, fitted with 3 h.p. air-cooled British engines, in which no water is required for cooling, and there is no risk of any burst water-jackets in frosty weather. Users of plant requiring a small, compact prime mover should see the "Coborn" petrol engines of single cylinder stationary type, air-cooled, self-contained unit, four-stroke, which develops 2.4 b.h.p. at 1,200 r.p.m., and has an approximate net weight of 130 lb

Kerner-Greenwood and Co., Ltd., C.43.

A special feature of this stand is a lily pond, the walls of which are built of brickwork, the inside of the pond being lined with a rendering of sand and cement made impervious by the addition of "Pudlo" brand waterproofing powder. In the centre of the pool stands a figure of a boy, modelled by Mr. P. G. Bentham, A.R.B.S. The original sketch model in bronze was exhibited at the Royal Academy in 1924 and was purchased by the Queen. The figure and the ornamental coping surrounding the pond are cast stone waterproofed with "Pudlo." At the back of the pond is a wall built with breeze concrete blocks selected because of their great porosity, and thus providing good proof of the water-tightness of the ¾-in. stucco rendering applied to the face of the wall, and also waterproofed with "Pudlo" brand powder. A stream of water runs down the face of this rendering during the whole time that the exhibition is open, and an examination of the back of the porous breeze concrete wall shows that there is not the slightest sign of dampness penetrating. Among other exhibits are several types of apparatus by means of which specimens of waterproofed cement mortar are subjected to pressures of water varying from 5 lb. to 300 lb. per sq. in. Upon the walls of the stand are displayed a number of the original water-colour sketches by Mr. Leonard R. Squirrell, R.I., R.E., from which have been reproduced the interesting illustrations used by the firm to advertise "Pudlo."

J. A. King and Co., Ltd., F.106.

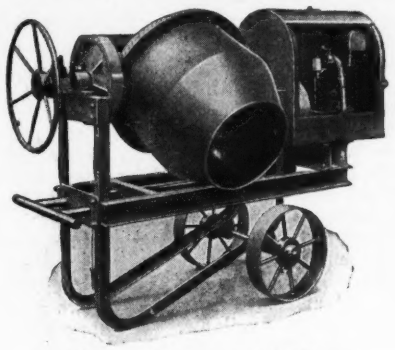
The following are a few of the specialities on view at this stand:—Concrete wall and partition blocks in thicknesses from 1½ in. to 9 in. These blocks have a rough surface for plastering on or rough-casting when used for external work; the blocks are also made with a cement face for external work and internal partitions, the latter being used considerably at the present time to avoid internal plastering; concrete gas flues, both single and double types, which can be quickly and easily erected; pumice partition blocks, very light in weight and affording excellent hold for nails and screws; plaster slabs for partitions, pugging and ceilings, either keyed for plastering or smooth face, dispensing with plastering and suitable where walls require papering; reinforced plaster roofing slabs, forming a light, fire-resisting roof construction and used on many important buildings. These are practically adaptable for factory and warehouse roofs, and give a smooth finish on the underside equal to a plastered ceiling; hollow-tile partition blocks; self-centering floor tube system, used extensively on many important buildings both in London and the provinces, and also abroad. It is a most economical floor, dispensing entirely with the use of centering, and enables floors to be completed rapidly, and can be carried out by the general contractor with unskilled labour. Other exhibits include a new type of floor known as the "King's Cross" floor; reinforced concrete and glass constructions; a glass tower made up of reinforced concrete windows; hollow glass walling and a small reinforced concrete and glass dome; and a lay-light of "Cristol" glass construction.

James Latham, Ltd., H.147.

This firm, established in the reign of King George III, approximately 120 years ago, has an eminently modern exhibit; besides several varieties of mahogany, of wainscot oak, of walnut, of teak, etc., excellent examples are on view of the most reliable Empire hardwoods in both figured and plain stocks, including Australian black bean, silky oak, walnut, myrtle, Tasmanian oak, Indian greywood, Padouk, teak, Canadian maple, birch, pine, British Columbian pine, and wonderful Nigerian mahoganies, walnut, and African teak. Richly figured plywood panels in Empire woods in very great variety are shown, the walls of the office being built with some choice specimens. A small collection of floorings in Empire woods are of peculiar interest and are made at the firm's own moulding mills at Leeside Wharf, Clapton. A comprehensive range of "Mahtal" flush laminated doors, both plain and faced with choice veneers of Empire hardwoods, should interest architects and others, as they are hygienic, decorative, soundproof, fire resistant, and very reasonable in price.

The Liner Concrete Machinery Company, T.305.

On this stand will be found a complete range of "Liner" machinery and moulds. Special attention is directed to the roller-pan mixers (two 4 ft. 3 in. models and one 3 ft. 8 in.). This machine is also made with 2 ft. 10 in., 5 ft. 6 in., 6 ft. 3 in. and 7 ft. 3 in. dia. pans. Several models of tilting drum concrete mixers are shown, including the "Liner-Junior" tilting-drum concrete mixer, a 5/3½ engine-driven machine. This machine is direct-driven (without chains) by 1½ h.p. "Lister" petrol engine, and has an unbreakable rocker-arm and many other distinctive features. The "Liner" friction hoist, a 10-cwt. engine-driven model, is also exhibited. All "Liner" hoists are direct-driven without chains through ordinary friction wheels—no

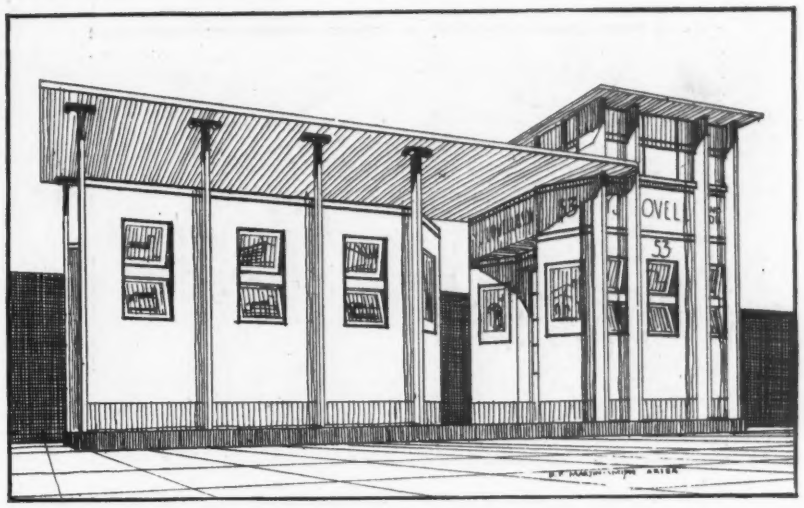


A "Liner" Concrete Mixer.

clutch to give trouble. "Liner" brick breakers, a diaphragm pump, combination slab block and brick machines, a concrete vibrating machine, and a variety of concrete moulds are other features of a comprehensive and useful display.

London Brick Company and Forders, Ltd., H.151.

This stand has been designed by Mr. Julian R. Leathart, F.R.I.B.A., upon simple modern lines to display the various standard types of the "Phorpres" (four times pressed) brick, of which 1,200,000,000 are produced annually. The different textures and colours of the three main products—Phorpres bricks, Phorpres rustic facings, and Phorpres white facings—have been utilised by the architect to effect a definite colour-tone scheme, varying from the darker rustic facings in the side and rear walls of the pavilion, through the middle tones of the common Phorpres, to the light tone of the white facing bricks forming the entrance feature. No bricks have been specially cut or shaped for the building. An item of particular interest is the sectionalised portions of wall showing the sealed multi-cellular construction obtained by the use of the Phorpres patented Cellular brick. This brick, whilst being stronger than many common bricks, is 22 per cent. lighter than the standard Phorpres brick, and is therefore of great value in steel-frame structures; in ordinary brickwork the cellular form of the brick gives increased insulation of sound, temperature and moisture. Around the stand are photographs illustrating some of the works and plant required to produce four million bricks per day. Samples of special bricks, partition blocks, land drain pipes, road stone, granite chippings, and other products of the company are exhibited, and further particulars and technical information concerning them may be obtained at the stand.



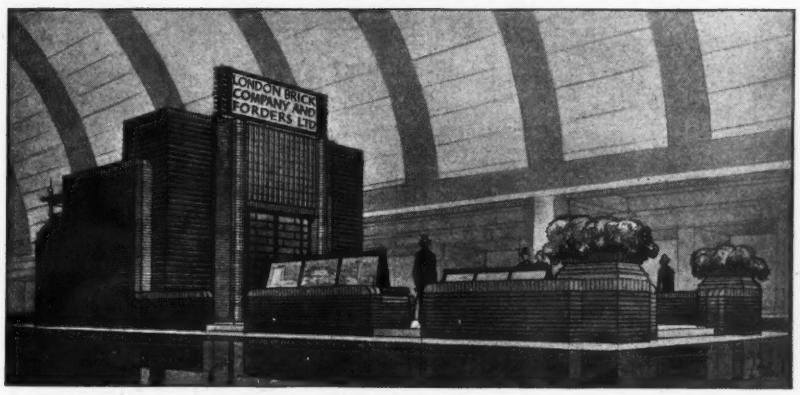
The Stand of Messrs. Y. J. Lovell and Son.

Y. J. Lovell and Son, D.53.

This stand, which we illustrate, should be of interest to every visitor, for on it are displayed photographs of buildings recently erected by Y. J. Lovell and Son. These cover a very wide range, and include banks, schools, flats, shops and offices, factories, public-houses, residences of varying sizes, and garden works. Established in 1786, this firm has offices at Paddington, Gerrard's Cross, Marlow and Beaconsfield, and inquiries are invited for all classes of building work in London or the provinces.

Walter Macfarlane and Co., O.255.

The exhibit on this stand comprises a kiosk completely constructed in cast iron, the corner mullions and entrance entablature being in severe modern style. An example of modern verandah ironwork shows columns, spandril arches, and surmounted by a highly enriched cast iron gutter. Two lamp brackets are also attached to columns. A canopy in miniature is also shown. Surrounding the stand on two sides carrier rails are formed of cast iron standards and polished tube rails. Inside a drain exhibit is shown in half section, enabling the public to see the benefits of glass enamelling. Also shown inside are a bath drinking fountain; two lamps, one of which is treated with cellulose finish; lamp pillar pedestal with boy figures; spiral stair; two bridge parapets; and a building front panel bronze sprayed, while facing outside at one end is shown a combination of building front castings with coat of arms. Cast and wrought iron railings, rain water and soil goods complete a valuable and informative exhibit.



The London Brick Company and Forders Stand.
MR. J. R. LEATHART, F.R.I.B.A., Architect.

F. McNeill and Co., Ltd., P.262.

The applications of asphaltic roofing felts are here shown. Especially interesting are some brick-built models with "Leadonite" and "Lakumen" bitumen dampcourse bedded in the usual manner, the brickwork constructed to indicate a building with a flat roof on to which different forms of flat roofings have been applied. The exhibits include "Combinite" bitumen roofing, which consists of either two or three layers of sheet asphalt cemented together with either two or three coats of refined bitumen, the surface being finished off in fine grit, thus forming a most economical roof covering. One special model displays an entirely new development, known as F.W.S. roofing, with a tiled surface, thus providing for extremely hard wear and forming a roof which is an insulated covering, fireproof, waterproof and sound-deadening. In addition to flat roofs, there is a very interesting exhibit in a pitched roof formed across the stand, and on this has been applied as an exterior covering "Lion" bitumen roofing. On a boarded surface is shown an excellent range of insulating and underslating felts. Other specialities include "Lionite" insulating and underslating felt, "Lion" reinforced bitumen roofing, "Lion" brand inodorous felts and sarking felts, properly overlapped and nailed, "Insulcrete" partitions, "Slagbestos" insulating and fireproof material, porous drainage pipe, etc.

Wm. Mallinson and Sons, Ltd., H.149.

An excellent display of hardwoods, veneers, veneered panelling and floorings, all of British Empire origin, is here shown. The woods include the following :—

British grown : Oak—wainscoats, square-edged boards and cut-through logs, walnut, sycamore, chestnut, beech, ash.

Australian grown : Queensland blackbean, Queensland silky oak, Queensland walnut, Queensland maple, Victorian oak, Tasmanian oak, Tasmanian myrtle, rose mahogany, Jarrah, Kaori pine, hoop pine.

Canadian grown : Maple—plain and figured, Quebec birch, Quebec pine, silver (Sitka) spruce, British Columbian pine, Western hemlock.

Indian grown : Laurel wood, silver greywood, Burmah teak, Bombay rosewood, Ceylon satinwood, Gurjun, Padouk, white chuglum, white mahogany, Burmah (Thitka) mahogany.

Miscellaneous : Honduras mahogany, African (Iroko) teak, pencil cedar, Honduras cedar, African whitewood (Obeche), Nigerian walnut, Nigerian mahogany, Sapele mahogany, Borneo cedar.

Empire timbers are now being increasingly used for building purposes, and all who desire to encourage this development should make a point of seeing this interesting display.

Masonite, Ltd., G.142.

This stand, which we illustrate, portrays the manifold types of Masonite grainless wood

The Masonite Stand.
MR. MYERSCOUGH-WALKER, Architect.

boards and their various uses combined in a striking manner. Both the practical and decorative aspects of Masonite are shown, it being claimed that these boards possess a natural texture so pleasing as to enable them to be used in architectural design work of every type without further treatment. The various grades of Masonite, their sizes and uses, are summarised as follows :—Masonite Standard Presdwood for all types of interior and exterior building and industrial purposes. The thickness is $\frac{1}{8}$ in.; and the board may be had in the following sizes :—4 ft., 6 ft., 8 ft., and 12 ft. by 4 ft. The weight is 12 oz. per sq. ft.

Middleton Fireclay Co., E.91.

This well-arranged stand has been designed to display the company's fireclay products in, as far as possible, their natural setting. There is a colonnade which gives a good idea of terra-cotta faience and the colours in which it can be obtained. Glazed bricks and tiles have been used for the construction of cubicles, and examples of enamelled fireclay sanitary ware are disposed about the stand. A selection of sinks for varying purposes, and lavatory basins, etc., are also to be seen, while a less formal note is given by the display of some attractive terra-cotta garden ornaments.

The Midhurst Brick Co., Ltd., K.185.

This stand is designed to offer practical demonstration of the uses of "Midhurst Whites" for light reflection. Midhurst Whites are British-made calcium-silicate bricks, made at Midhurst, Sussex, possessing properties similar to those of Portland cement, and their distinctive feature is the smooth, hard, white surface, which gives the advantages of glazed brickwork at lower cost. This surface is impervious to soot and gases, does not disintegrate, can be readily washed down, and will not change colour. Incidentally, it will take distemper perfectly, and has been largely used for interior as well as external facings. It is claimed that Midhurst Whites are equal in strength and durability (including resistance to weather) to the best engineering bricks, being second only to first-quality Staffordshire blues, a fact which has been proved after exhaustive tests by the Building Material Research Committee. British Standard size and other sizes can be supplied when required, besides speciality shapes. A special feature is being made of a rounded *internal* angle to facilitate cleaning. Midhurst Whites have been used on such buildings as Broadcasting House, the new Masonic Headquarters, Worthing Town Hall, and the Battersea Power Station.

R. H. Neal and Co., G.126 and 127.

New and improved models of the "Rapid" petrol cranes, embodying numerous patented features of exclusive new design, are on view here. Specially interesting are the two new 6 cwt. size cranes, one with ordinary jib as used for excavation, trench-digging, muck-winding, etc.: and the other with 35 ft extension mast for barrow hoisting, concreting, etc. Improvements on these models include a completely new design of cab or housing for the hoisting unit, giving greater strength and easier handling, dual controls so that the crane can be operated from either the front or the back, the fitting of a "Lister" engine which has proved so efficient on the large model, a new type of brake mechanism requiring no adjustment for wear, and the fitting of "Tecalemit" grease-gun lubrication throughout. There are also exhibited two 12 cwt. model cranes, one with ordinary jib and the other with 20 ft. extension mast, the latter shown actually at work. These 12 cwt. models have all the improvements embodied in the new 6 cwt. models. A new 2-ton full circle mobile petrol crane, recently put on the market, completes a display of interest to the builder and road surveyor.

Nettlefold and Sons, Ltd., H.146.

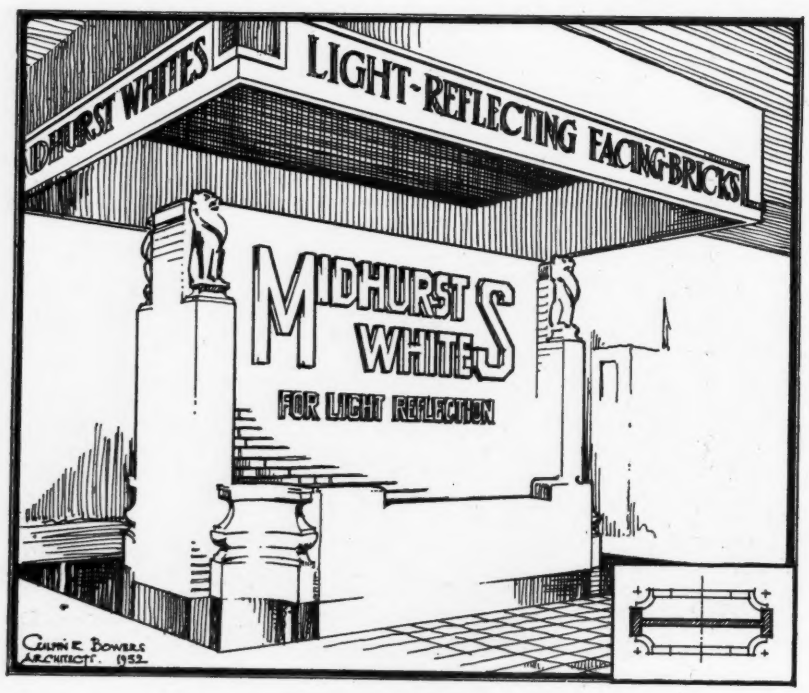
On this stand are shown a number of floor and window fittings in "Semprax" cast stainless steel, which is being increasingly used wherever extreme brilliance of appearance, combined with durability and the minimum of attention in maintenance, are required. In addition to the standard patterns, castings can be made to architects' own designs, and give a distinctive finish to a building at comparatively small cost. An interesting novelty is the "Fort George" rim lock and furniture, now shown for the first time. The lock is enclosed in a moulded "Bakelite" case, with furniture to match, both corresponding to the standard "Bakelite" electric light fittings. The lock itself is double-handed and reversible, having a combined dead and live bolt, and the furniture has the unique feature of a self-adjusting spindle, which can be used for any thickness of door from $\frac{3}{4}$ in. to $2\frac{1}{2}$ in. Mortice furniture and finger plates can also be supplied, and though the standard colour is dark brown, other colours can be supplied to order. "Ebonestos" name plates, letters and numerals provide a convenient and effective method of distinguishing houses or individual rooms. Their neat appearance and high degree of legibility in a dim light make them particularly suitable for hotel corridors, etc.

Fredk. Parker, Ltd., Q.276.

Of especial interest on this stand is the Parker roller-pan mixer. Several interesting features reward an inspection of this machine, not the least of which is the self-locking door controlled by combined lever and roller action giving an exceptionally tight joint when closed. The cone rollers are of noticeably substantial build, and it is claimed that a thoroughly ground and kneaded product is obtained of a smoothness that leaves nothing to be desired, whilst independent adjustment of the springs without the use of spanners is a feature. Running costs are computed at 2s. to 3s. per day, two sizes of machine being available. The larger size is fitted with pans of 4 ft. 6 in. diameter, and has a capacity capable of keeping 40 bricklayers supplied, the smaller machine having pans of 3 ft. 6 in. diameter to keep 20 men supplied. It is also efficient for mixing fine concrete (wet or semi-dry) plaster, hair plaster, compo, etc. The "Kubit" breaker and the Parker patent contra-flow washer will claim renewed attention as the result of certain additions and improvements, and the usual range of Parker plant will repay inspection.

The Patent Impermeable Millboard Co., Ltd., P.260.

The manufacturers of the building board specialities here exhibited have specialised in scientifically constructed panel boards for over forty years in the shipbuilding, railway and coachbuilding trades. "Sundeala," a superior waterproofed wall and ceiling board of excellent qualities, is shown in several decorated effects. "Insulwood" is waterproofed and half an inch thick, and is shown as applied to walls, etc. It is principally an insulation board of excellent insulating powers, ensuring efficient insulation against heat, cold and



The Midhurst Brick Co.'s Stand.
MESSRS. CULPIN AND BOWERS, FF.R.I.B.A., Architects.

sound. Specimens are shown decorated, and the board may also be used as a plaster base, the plaster adhering to its surface with great tenacity. "Sunburite," as well as excellent fire-resisting and antproof boards, are also shown.

The Patent Tip-up Bath Co., L.220.

On this stand is displayed an exhibit of considerable interest to housing architects. Tip-up baths are still required where space is limited, and these are made of lead-coated steel sheets or all sheet copper, originally invented by this company for the smallest type of cottage. Several gold medals have been awarded for this design, known as Darby's patent, and the uses of this type for slum clearance and other housing work, where space is at a premium, are obvious.

Pilkington Bros., Ltd., S.300.

The uses of glass for modern decoration have spread very considerably within recent years. For lighting, for walls, for furniture, for floors, even, glasses of varying textures and shades have been employed, often with considerable success. On Messrs. Pilkington's stand, which we illustrate, will be found a comprehensive and well-arranged display of glass suitable for use in any type of building construction, including interior and exterior decoration. Architects will be interested in the variety shown. "Vita" glass, the ultra violet ray admitting glass for homes, offices, hospitals and schools, is also on view.

Messrs. E. Pollard and Co.'s Stand.

E. Pollard and Co., Ltd., G.143.

This exhibit includes various types of Haskins' wood and steel rolling shutters, embracing the large No. 4 (Rolador) section interlocking steel rolling shutter, operated by endless hand chain gear, representing the latest improvement in rolling shutter construction; a pair of double (Firola) fire-resisting steel rolling shutters, constructed to comply with the London County Council's, fire insurance companies', district surveyors and London Fire Brigade's requirements. A small wood rolling shutter suitable for private and public lock-up garages is also shown. A special feature of the stand is the patent portcullis grille type of shutter, which is operated by means of a self-contained electric power unit, through the agency of a push-button control, or by a self-sustaining winding winch with detachable handle through wire rope and pulleys. This type of shutter forms an admirable screen for use in shop premises where display at night is required and at the same time protection given to the windows. Examples of wrought iron and ornamental metal work are shown in fire-resisting doors and grilles. Another feature is the "Sunblind," fitted with disappearing arms. These are welcomed by architects, as they eliminate the necessity for dealing with the effects caused by unsightly blind arms on the building façade. These blinds, as well as the patent portcullis, can be operated electrically.

Stand of Messrs. Pilkington Bros., Ltd.

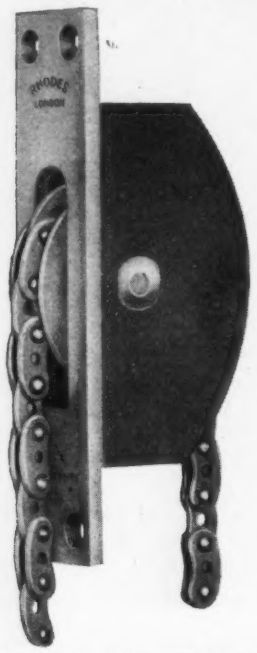
Redalon, Ltd., G.139.

Several products of use to the building trade are here shown. Four years ago "Bull Dog" floor clips and "Redalon" liquid were first shown at the Building Trades Exhibition at Olympia. At that time they were comparatively unknown products to the building trade, although they had already proved their worth on many important contracts; to-day "Redalon" liquid is widely used as a cement retarder wherever an efficient key is required for bonding plaster or cement renderings, terrazzo or tiles to poured concrete. Photographs and exhibits illustrating the efficiency of the "Redalon" bond are shown. An exhibit of particular interest is the key produced by the use of "Redalon" on a heating coil panel. "Redalon" liquid is also supplied for beautifying concrete, by removing the outer skin and exposing the aggregate beneath. The "Bull Dog" floor clip exhibited is the 2-in. regular clip, which is usually supplied. Special sizes can be manufactured at the firm's Birmingham factory for contracts where sizes other than the 2-in. are specially required. The "Bull Dog" exhibit shows examples of floor clips fixed to solid concrete floors and also to Kleine hollow brick floors. Photographs showing illustrations of a few interesting contracts where "Bull Dog" floor clips have been incorporated are also on view.

Rhodes Chains, Ltd., C.44.

This firm's exhibits demonstrate practically the advantages obtained by the use of their improved sash chains and patent pulleys for sash hanging, blackboards, lift shutters, and work of similar nature. The new "rotating-sleeve" lubricated bearing pulleys maintain that high character of efficiency and manufacture always associated with Rhodes' productions. Several new features, such as chain window pulls for raising and lowering heavy sashes, and other window fitments, are among many other interesting exhibits on this firm's stand, where may be seen also the latest productions and improvements for providing permanent ventilation with lighting

of this firm's associated company, the Greenwood Ventilating Co. These include not only Greenwood's patent ventilating windows and skylights, but several new designs, including a non-condensating deadlight, and



The "Rhodes" Window Chain Pull.

other "Permavent" productions—an attractive exhibit of copper and steel galvanised patterns, of air extractors, of pressed steel and sheet metal work.

Rippers, Ltd., D.51.

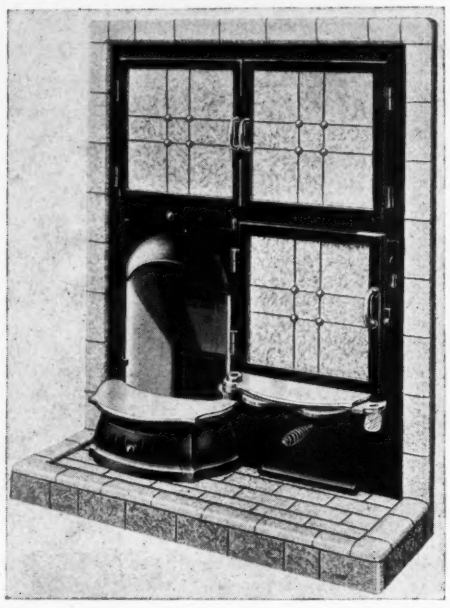
A Tudor entrance hall and staircase in English oak constitutes the chief exhibit, and illustrates how the best modern practice in manufacture can be successfully allied with some of the finest features of period design. The special treatment used for this exterior accentuates the vigorous texture of English oak, while the interior, which is panelled out in Austrian oak, still further exploits the decorative possibilities of the method. Upstairs are examples of panelling and doors in Western red cedar, and also on view are two patented specialities—"Hygienic" flush doors and "Miracle" sectional partitions.

Shaws Glazed Brick Co., Ltd., J.171.

This stand is specially designed to show the extensive possibilities of faience for internal decoration, in addition to its already recognised qualities as a material for exteriors. With this in view the stand includes two interiors suitable for (1) a hotel vestibule; (2) a café. These two interiors, together with a small office, are carried out in artistic colour schemes, which, combined with their general design, should be of great interest to architects. Display panels, embracing a wide range of interesting colours and textures, form an integral part of the design of the exterior, and these, together with several further important innovations in faience production, add to the general usefulness and interest of this stand.

Samuel Smith and Sons, Ltd., D.65.

A full and varied range of "Foresight" patent grates is being shown this year by Messrs. Samuel Smith and Sons. These modern grates are specially designed to give

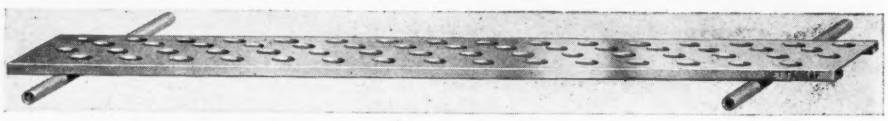


The Smith "Foresight" Patent Grate.

economical coal consumption, and they also possess attractive exteriors combined with general utility. There is a "Foresight" model at a price to suit many types of houses, and all models are built to stand hard wear and tear. Popular models are the Foresight No. 2 NHC, No. 4 D. "Solo-Oven," "Mity-Oven," "Wellmade" and the "Solo" and "Mity" with extra hot closets. "Foresight" grates are noted for good finish, robust construction and general appearance. The new "Foresight" fire now fitted is a distinct addition to modern economical grates.

The Steel Scaffolding Co., Ltd., B.8.

The stand erected by the above firm constitutes their main exhibit *ipso facto*, the stand being built of "Bettaskaf" steel scaffolding. The significant feature of the "Bettaskaf" system of scaffolding is that special tubing is not required; plain-ended, standard 6 gauge steam tubing is employed. The "Bettaskaf" drop-forger fittings withstand a pressure of 4 tons. The couplers are so constructed that there are no loose parts to get lost. Apart from straightforward scaffolding operations, "Bettaskaf" is adaptable to many other uses, such as storage racks, bins, temporary shelters and bridges, crush barriers, grand-stands, etc. Other "Bettaskaf" exhibits at Olympia will include adjustable gantries, shores, tripods, splitheads, and modern equipment in steel for the builder and decorator, including the new "Bettaskaf" steel board, a distinct step forward in scaffolding plant, which is certainly one of the novelties of the Exhibition. For most scaffolding operations the steel board is safer, stronger, yet as handy as the standard wooden board. And, by virtue of its longer "life," it is more economical. Uniform in material and of patent design and construction, it is claimed for the "Bettaskaf" board that it practically eliminates bending stress. The board is dimpled to avoid any tendency to slip. Contractors should not fail to inspect this development.



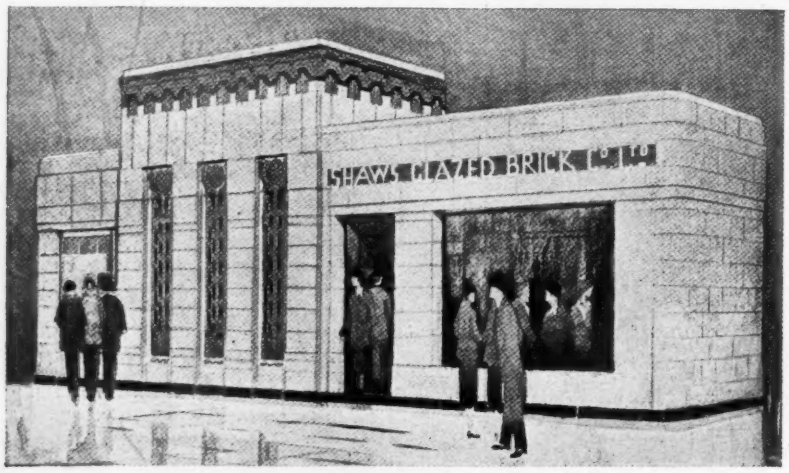
The New "Bettaskaf" Steel Board.

Stothert and Pitt, Ltd., R.289 and 290.

These well-known manufacturers of concrete mixing machinery are exhibiting seven mixers, three of which are entirely new models. Among the new machines is the

The Stothert and Pitt "Victoria H.M." Mixer.

No. 3½ tilting mixer, fitted with 3 b.h.p. "Lister" engine and hoisting winch capable of lifting 5 cwt. at 80 ft. per minute, and also the new Super-Seven "Victoria" mixer. This latter mixer has been designed on similar lines to the well-known "Super-Ten" machine, and speed of mixing, compact design and portability are the main features. The "Super-Seven" may be mounted on either a four-wheel or two-wheel truck, and with the latter arrangement it is designed for end feeding and discharge. Special attention should also be paid to the new type jigging and vibrating screen, which, while of simple design, is extremely efficient in operation.



The Shaws Glazed Brick Stand.

"Treetex," P.264.

This stand is composed entirely of Treetex insulating board, and some of its various uses and decorative possibilities are demonstrated. The construction consists of Treetex nailed to wood studding, and particular attention is called to the inconspicuous nailing. Decoration is carried out with paint, distemper, enamels, wallpaper and other media. Examples are also displayed of the bonding qualities of Treetex when plastered. The telephone box, composed of Treetex, Venesta-Treetex and Plymax-Treetex, in which the sound of a loudly ringing bell is deadened out and the hot box test in which the passage of heat through a panel of Treetex is actually

measured, give indisputable evidence of the efficiency of the material. Venesta-Treetex and Plymax-Treetex is a new composite material on view, and doors composed of Venesta-Treetex are also shown. Venesta-Treetex is composed of a layer of Treetex with the well-known Venesta Plywoods cemented on one or both sides. Interesting examples of the insulating properties of Treetex are afforded by the display of three "Woodland" cabinets, in all of which Treetex is used as the insulating medium.

Triplex Foundry, Ltd., B.13 and L.218.

The "S" pattern triplex grate shown on stand B.13 embodies, in addition to the standard Triplex roasting oven and boiling hot closet, an enclosed plate rack running the whole width of the grate, sufficiently large to warm plates and dishes for the average family. Standard Triplex models with varied tiling effects are also shown. On stand L.218 the Greybridge range is to be seen. This is the company's latest contribution to meet the demand for a cheap and efficient grate for working-class houses. It is built of cast-iron plates, and at the back of the open fire can be fitted a boiler capable of serving a 30-gal. cylinder. Several housing schemes have been supplied with this grate. The Tweenie top oven model, for use where brick openings are restricted, is also on view, and this grate is particularly recommended on account of the ease in working and in fixing.

Tuke and Bell, Ltd., D. 59.

Here is seen an architectural model of a country house and grounds, showing the drainage system, discharging to a Tuke and Bell sewage purification plant, consisting of semi-septic liquefaction tank, aerobic bacterial filter bed with distribution. An "Ideal" revolving distributor, for larger circular filter beds, made in sizes from 10 ft. to 65 ft. in diameter; a pneumatic ejector, working automatically by compressed air; a pressure water filter, with cleansing gear, suitable for dealing with river water for country house supply, and an hygienic towel for hotels, etc., which provides a stream of heated air by which hands or face may be quickly and thoroughly dried after washing, are all on show.

Venesta, Ltd., H.148.

"Plymax" and "Plywood" are incorporated in the design of this stand, and are shown in use, structurally and decoratively. The whole stand is a well-designed advertisement for the ability of plywood to behave in an adaptable and pleasantly ornamental fashion. The design, by Mr. Wells Coates, is one of bold simplicity, the accommodating character of plywood being illustrated in every line. The nature of the material itself is intrinsically decorative, so that in all the surfaces it presents to the eye an ornamental quality that is *of* the material and not *on* it. Incidentally, the whole stand is organised to provide the maximum amount of information regarding uses, fixing of "Plywood" and "Plymax," and the information is easily accessible, much of it being underlined by practical application to some part of the stand itself.

Vulcanite, Ltd., E.100.

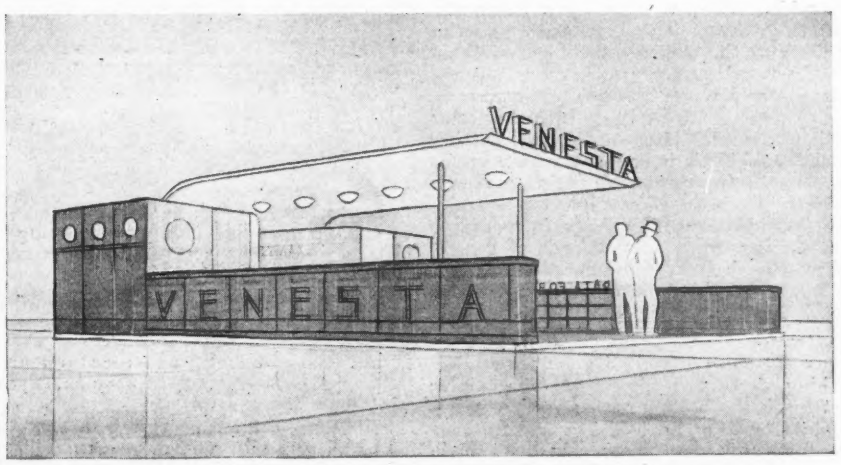
As at previous Exhibitions, this firm is showing models explanatory of its system of covering roofs of wood or concrete construction with "Vulcanite" flat roofing—which is now largely adopted throughout the United Kingdom for making roofs permanently watertight. This quality is adequately demonstrated by the fact that it is often used for lining tanks and swimming pools. "Vulcanite" roofing is, we believe, accepted by all leading fire insurance companies as an insurance tariff roof, because it reduces fire risks to the minimum. The principle is that the roofing hermetically seals the roof, and without a current of air there can be no combustion. Lastly—and very important—where "Vulcanite" roofing is used the first cost is the last. The company has received news recently of one of their roofs laid 28 years ago which has not cost one penny in repairs. Besides "Vulcanite" flat roofing, a variety of other roofings—such as "Rexilite," "Ark" and "Pyramid" pure bitumen roofings, and "Leatherite" and "Apex" felts for roofing, sarking and lining, dampcourses, "Vulcanite" sanded asphalt, and carpet and "Underlino" linoleum underlays are shown, the whole making a most interesting display.

Westmorland Green Slate Quarries, Ltd., E.86.

This exhibit is in the form of a pavilion covered with Westmorland green slate laid in diminishing courses. The exhibit includes samples of the slate produced at the several quarries operated by the company, such as Buttermere green, Elterwater, Coniston, Tilberthwaite, Quay Foot, and Kentmere. A few samples of fireplaces in green slate are shown inside the pavilion, together with several drawings suggestive of architectural uses to which Westmorland green stone can be put.

Winget Ltd., S.301.

Many examples of concrete and road-making machinery, from big open and closed drum mixers to an efficient barrow are to be found on this stand. The Winget closed drum mixer has been one of the outstanding Winget successes of the year. It is an "All-British" design, constructed from British materials, light, strong and rigid, combined with ease of portability. The model shown is a 10/7 cub. ft. capacity, fitted with swivel wheels to facilitate end or side loading and to enable the machine to be turned in any direction. A patented vibrating device fitted to the hopper assists greatly in this rapid operation. Winget open drum mixers are on view, and particular attention is drawn to the improved "No-Hopper" model. One-man portability is a simple matter, while a great saving in both time and labour is effected by the fact that the barrow can be run right under the drum to receive a full batch. Winget roller pan mixers, pumps, conveyors, hoists, barrows, block and slot machines, crushers, etc., are further machines on view.



The Venesta Stand. MR. WELLS COATES, Architect.

INQUIRY BUREAU

QUESTION.

Question of a Main Wall.

SIR,—A building 30 ft. square is divided into two equal portions by a central wall, one portion being used as a stable, and the other as a laundry. The building is covered by a double-span roof with a lead gutter between. This gutter, as also one end of the principals of both roofs, is carried on the central wall, which is built of stone, and of the same thickness as the external walls. A wall plate runs along the top of the wall and carries the feet of the rafters on each side of the gutter. Is this central wall a main wall, and would it be included in the agreement as to repairs, a copy of which I enclose? INTERESTED.

[The wall in question is obviously a "main" wall and comes within the repairing covenant.—ED.]

ANSWERS.

Exterminating "Silver Fish."

[ANSWERS TO "R. C. & SON," SEPTEMBER 9.]

SIR,—The cure for the above trouble is to use pyrethrum powder sprinkled around where the "silver fish" are found. This powder can be bought from any big chemist, but the purchaser must insist on the powder being absolutely fresh and must use it fresh, as it becomes "dead" in quite a short time. Your correspondent does not say if a gas cooker is in the vicinity of the draining board, but, if so, the breeding ground of the "silver fish" will probably be found under this, as they prefer warmth. On inquiry at South Kensington Museum I was informed that the above powder was the only cure, and I have found it so in a similar case to that of your correspondents.

T. HANSFORD WHITE.

SIR,—Spraying with a strong formalin solution will be found an efficient method of dealing with this and all similar insect pests.

SPRAY.

SIR,—Here is a specific:—Corrosive sublimate, 1 oz.; muriatic acid, 2 oz.; water, 4 oz. Dissolve, then add 1 pint turpentine; decoction of tobacco, 1 pint. For the decoction, boil 2 oz. of tobacco in 1 pint of water, then mix all together. This mixture can be sprayed or brushed. (Spring-bottom oiler for cracks, etc.) This wash is a deadly poison. STRAND.

Bush Hammer.

[ANSWER TO "INQUIRER," SEPTEMBER 9.]

SIR,—This tool is a hammer having rough striking faces raised into a series of pyramidal points, and is used for dressing the harder stones.

ROCK.

Treatment of Outside Oak.

[ANSWER TO "J. C.," SEPTEMBER 9.]

SIR,—The oak should be pickled with caustic soda, to remove as much of the previous treatment (probably tar) as possible. Rubbing in beeswax and turpentine will then bring out the tone of the wood.

QUERCUS.

Historical Question.

[ANSWER TO "STUDENT," SEPTEMBER 2.]

SIR,—The elder Callet's dates are 1755-1850, and it was in the first half of the 19th century that he became prominent chiefly in the literary field. The younger Callet (his son) was definitely a 19th-century practitioner, being associated architect, among other works, in the Halles Centrales at Paris.

DATES.

Repairing Roofs.

[ANSWER TO "MAINTENANCE," SEPTEMBER 2.]

SIR,—Tiles having nibs can be pushed up in place and dropped over the batten to hold. In the case of slates, it is necessary to nail a strip of lead between the slates underneath, then slip up the slate and turn the lead up over the bottom edge to keep it in place.

TACKS.

THE BUILDING TRADE

HINTS ON BUILDING PRACTICE.—XII

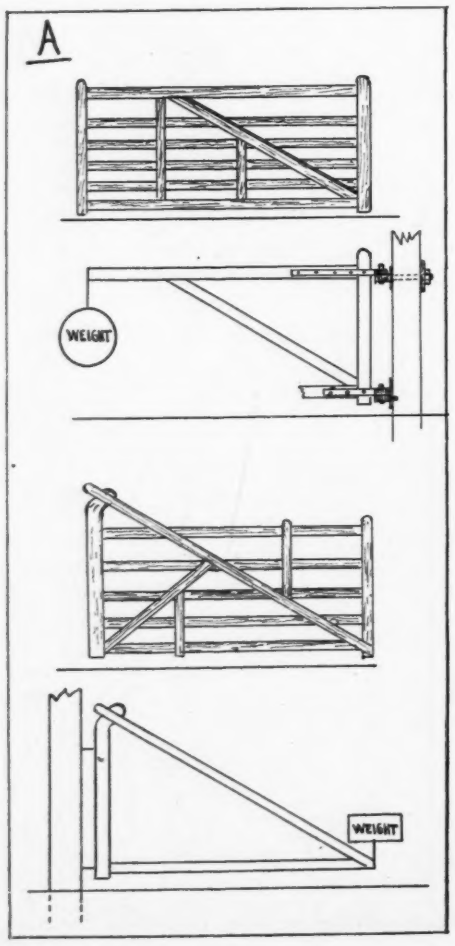
BY J. R. TAYLOR.

CARPENTRY AND JOINERY REPAIRS AND RENEWALS.

There are those who would have us believe that we now build too well, that is to say too lastingly. But if this be true the fault lies with the designer of the building and not the men who carry out the work, for the joint product of an artist and true craftsman is something we might wish to last for ever. There is much truth in the proverb that "if a thing is worth doing it is worth doing well," and nothing could better be worth doing than good building, even when regarded from no other point of view than that of economy. At all events nothing is more uneconomical in regard to small domestic buildings than to use poor quality, ill-designed joinery—ill-designed in regard to its resistance to weather and wear. In regard to joinery work exposed to weather, the design in detail is of very great importance, for water will penetrate to places that cannot be reached by the painter and decay once set in is very difficult to arrest.

Wooden Gates and External Doors.

In search of the "something that is different," many wooden gates are designed without regard to good construction. A wooden gate is necessarily composed of a number of pieces of timber joined together, and in use all the joints are subjected to strain. If the forces in play tend towards the opening of the joints, and means of construction are not adapted to resist the stresses, then water will get in. As wood, even when well painted, expands and shrinks alternately in spells of wet and dry weather, it is difficult totally to exclude water from protected joints, but it very often happens that the design of a gate is so poor that some of the joints are forced open, and the water is actually led to them. And if, in addition to poor design, the gate be badly hung, so that it tends to drop at the toe, its life may be a short one.



As a means of illustrating the principles underlying the hinging and hanging of gates, two plain but reasonably well designed gates, taken from a well-known manufacturers' catalogue, are shown in the sketch A and stripped down to their three principal members carrying the load imposed by the other members. These gates are not faultless, but under practical conditions it is quite impossible to make wooden gates that are in every respect perfect. It will be seen that the weight of the gate is tending to withdraw the hinge hook from the top of the post, and to thrust in the bottom hook. And if we regard the top rail and heel post as being arms of a bent lever, it is realised that the force exerted is multiplied. And these considerations apply to all doors and gates hinged by any of the usual methods to posts or frames. But not only are the forces tending to withdraw the top hinge hook, but to withdraw the top rail tenon from the heel or hanging post or style, and to rack all the other joints; and the main virtue of the long double strap hinge is that the bolts it carries resist this pull, and the strut tends to maintain the angle between heel post and top rail.

The first gate shows the brace to be in compression, and it is therefore a strut, whereas in the second gate it is in tension, and is a tie. But in both cases it is engaged with every rail for the purpose of keeping the angles true and the joints sound. And if for gates that are ultimately to be painted the joints are bedded in white lead in oil, and the crossings are similarly treated, they are likely to continue to be resistant to the entry of moisture. It is, however, desirable to give them all the shelter possible, and to add a wider capping, and also to weather all struts or braces away from the rails they cross, so as to throw off the water as quickly as possible. This is a point that is frequently neglected in the case of gates made after the manner of a framed and filled-in door; in such gates all the top edges of rails and of braces should be weathered away from the boards.

The forces acting on the hanging post tend to pull the top over, yet constantly one sees them strutted rather than tied. In these days when concrete is comparatively cheap it is well to use a post stout enough to carry the gate and to root it in concrete. The concrete should be brought up a little above ground level, and then be topped up with cement mortar weathered away from the post, but tucked into a shallow groove.

Gates, and external doors not enjoying shelter, seldom last long in a satisfactory condition if constructed with sunk panels bolection moulded. Exposed to rain and sun the joints open and permit water to enter between the rails and the upper mouldings, and between the panels and the lower ones. When they need early repair the painter introduces hard stopping into the mitres, with the result that the mouldings later on lift still further from the bed. This is one of the reasons for the preference for stopped chamfers or beads worked on the solid shown by earlier architects. Considerations of defence in regard to water running down the surfaces of an exposed woodwork greatly influenced all of their detailing.

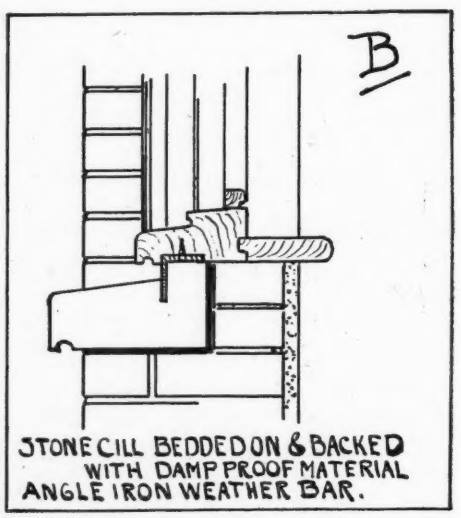
It is a good plan to put weather-boards at the bottom of all external doors without waiting until the entry of wind-driven rain renders something of the sort necessary. The painter cannot reach the bottom edge of a door without unhanging it and decayed bottom rails are in consequence very frequently met with. When rubber wet-and-draught excluders are fixed on the inside of the door at the bottom edge the water is held up underneath and decay is hastened. All builders doing repair work know that these things happen, but they do not always reflect on why they happen. Gates are frequently designed with open work tops; when this consists of turned balusters, or pale and space, the ends of them should not be stubbed into the middle or lock rails. The top edge of the rail receiving them should be weathered both ways and the ends of the balusters be notched so that they ride. The top rail should be grooved to receive the tops of the balusters or pales.

Much more might be said as to the designing of wooden gates and doors, but the whole matter turns on excluding moisture from all joints or joins, and methods will vary with differing requirements. But not even the edges of match-boards should be put together without a coat of white lead in oil, and hinges and other ironmongery should be fixed while a thick coat of paint on the inside surfaces of them is still wet.

The jambs of external door-frames decay at the bottom very quickly if not protected by being inserted into cast-iron shoes or by other means. When repaired, one constantly sees them with a splice cut in the wrong direction, so that the rain running down the post is able to enter. Splicing is a method of very doubtful economy, and it is usually better to replace the jamb with a new one, and particularly so if it carries the hinges.

Wooden Windows.

Even when the sills of wooden windows are of oak, decay sets in earlier with them in many cases than with the remainder of the frame, though that be deal. It has to be assumed that water is expected to reach the weather bar, for that is the reason for fixing one, and it is thought that a very considerable improvement would be brought about by a modification of the detailing on the lines of Sketch B. It will be seen that with a bar of this form and a deeper weathering to the stone sill, the painter would be able to reach the bar and the exposed portion of the underside of the wooden sill. To replace a decayed window sill is rather an expensive repair, for generally the frame has to be taken out and internal plastering is disturbed. Sometimes painters endeavour to get over the difficulty by removing as much of the decayed wood as will yield readily to a putty-knife, and then fill up with plaster of Paris; this is very unsatisfactory. Sometimes the plumber takes a hand and covers the sill with sheet lead, which, under the influence of sun and rain, usually creeps and wrinkles. If the carpenter tries his hand, the new piece he introduces generally has to be fitted between the pulley styles of a sash window or the jambs of a casement window,



and thus an already weak point is further weakened. It is much better to face the cost of entirely renewing the sill, and while the opportunity presents itself bed the new sill in white lead and overhaul the rest of the frame.

Specifications usually call for frames to be bedded in hair mortar and to be pointed in cement, but it is only very occasionally that compliance is made. More often than not the frames are built in, and though the pointing is done, it makes a poor job. It would be far better to plant a fillet on the face of the frame and form in front of it a groove similar to that made for linings. The fillet would form a stop and the groove afford a key, and if mastic pointing were then well pressed home, it would stop there permanently.

With deal-cased windows it is generally the joints between meeting rails and sash styles that first fail, but with casements it may be any of the joints. Usually this is the result of the application of force to sashes that are swollen with moisture or stuck with paint. The fault is so common that makers stock plates for repairs and list them at prices per gross. Iron casements are usually free from this fault, but, unless of really good quality, have defects of their own, and repair is costly when it calls for drilling and tapping.

Sash cord is stocked in such a wide range of qualities that without taking into consideration those that are reinforced with copper, or any variation in diameter, the prices will vary by hundreds per cent. In very many cases breakages can be traced to poor fixing. It should be noted that the wheel of an axle pulley usually projects well beyond the face, and that when a top sash is closed and bottom sash fully opened, this projection is accommodated in the same groove in the sash as that which houses the end of the cord. The cords are nailed to the sashes in most cases with flat-headed clout nails well driven home so that the cord is flattened to a greater width, and, in addition, is so nailed in some cases that it "snakes" in the groove. The grooved pulley wheel then presses on it with two blunt but cutting edges.

Side-hung casements that open outwards, whether of wood or iron, should be always provided with a hood. In summer much of the rain that falls when there is thunder about drops nearly vertically and bounces off the top and cross bars of an open casement into the room. And when there is a higher window immediately above, the water pouring off the sill adds to the annoyance. If casement windows have no fall-back or top-hung push-out lights, it frequently happens that they cannot be left partly open, even though in pairs hung to opposite hands, for want of this top shelter. The hood need not, of course, have considerable projection, but it should be greater than that to the sills so that water from it will fall clear.

Damp makes a very frequent appearance below window sills, and plastering and skirtings suffer by reason of this. It is not a case for repair by a carpenter as a rule, except as regards the damaged skirtings, but I recently came across a case where in a good house somebody had thought otherwise, and lined the space between window bottom and floor with match boarding. A vigorous growth of dry rot had developed in consequence.

(*To be continued*).

WORKMEN'S COMPENSATION

"OUT OF AND IN THE COURSE OF EMPLOYMENT."

The case of Brentnall *v.* London and North Eastern Railway Company, reported in *The Times*, June 18, again illustrates the difficulty of ascertaining with certainty when an accident has arisen out of and in the course of the employment under the Workmen's Compensation Act. The facts seem simple. The applicant was an engine driver, and apparently his duties had taken him to Sheffield at a distance from his home. He had left duty at 9 a.m., and was not liable to return to duty until 7.40 p.m., and during that period he went to a hostel provided by the railway company for the convenience of men released from duty at places where they were not resident, and there sustained a slight accident, the nature of which is not mentioned in the report. In an application for compensation, the County Court judge, sitting as arbitrator, had made an award in his favour, but the company appealed to the Court of Appeal. This was one of the cases in which that Court held this to be a question of fact for the arbitrator, and as there was no evidence that the County Court judge had misdirected himself, the Court dismissed the appeal. The Court is reported to have said that the exact conditions under which the railway employees might, or should, go to the hostel were not easy to define, but it appeared that the men were expected to go to it for reasonable rest as part of their duty to their employers. According to the report, the Court referred to the cases upon this point, but unfortunately the references to those cases or their titles are not given, but it was held that the question was one of degree and therefore of fact.

In our issue April 16, 1920, we drew attention to two cases, Bell *v.* Armstrong Whitworth & Co. (1919, *Weekly Notes* 154), and Redford *v.* Armstrong Whitworth & Co. (1920, A.C. 757). In those cases a canteen had been supplied by the employers for the use of their employees, and in the first of the two a woman, whilst crossing the street to reach the canteen, was knocked down and killed, and the Court of Appeal held the accident not to have happened out of and in the course of the employment. In the second case, a woman, having finished her meal in the canteen, was hurrying down the stairs of the canteen to return to work when she slipped and broke her ankle (in both cases the street had to be traversed), and the Court of Appeal held this accident to have arisen out of and in the course of her employment, a decision which was affirmed by the House of Lords, but only by a majority of three to two. It seems fairly clear that the case we are considering would fall under this second decision, as the man was still on the premises supplied for his convenience by the employers; but the fact that the minority in the House of Lords in Redford's case took the view that the employee was not on the premises to perform any part of her duty to her employers, and therefore was not entitled to compensation, shows the difficulty of coming to a decision in such cases. If it is left as a pure question of fact for the various arbitrators, no finality can ever be reached, and this involves the employers, or their insurers, in litigation; and as we urged in our former article, this is a question which should be capable of definite decision. The reasonable common-sense point of view would appear to be that expressed by the minority in Redford's case, that when an employee is on the employer's premises solely as a convenience to himself and not connected in any way with the work required of him by the employer, then the Act should not apply; and this view was adopted by a large majority in the House of Lords in the case St. Helens Colliery Co. *v.* Hewitson (1924, A.C.59; *The Builder*, April 25, 1924), where a railway train was supplied as a convenience for workmen to convey them to and from the colliery, but there was no obligation on the men to use it, and it was held that an accident sustained by a workman did not arise in the course of his employment. It must be remembered that if, while on the employer's premises, he meets with an accident due in any way to negligence of the employer, he still has the same remedies open to him in law that any member of the public would have visiting clubs or restaurants for the purposes of rest or refreshment, though this was not the case in the St. Helens case, as workmen using the train had to agree not to make any claim against the railway company.

THE HEATING OF BUILDINGS

A NEW MEASURING INSTRUMENT.

For some years the Department of Scientific and Industrial Research has been studying the efficiency of buildings from the standpoint of the user, a study which includes the heating and ventilation and the acoustics of buildings. The investigations into the heating of buildings are of considerable interest; it has been shown, for example: (1) that where free ventilation is required radiant heating is relatively advantageous; (2) that some rooms are difficult to warm by reason of the nature of the fabric of their walls.

In connection with such investigations it was observed that the physiological aspects of comfort are as yet imperfectly understood, and reasons have been sought in explanation of such a fact that two rooms are not equally comfortable when a thermometer shows the same reading in each: in a room with cold walls, a higher air temperature is required than in a room with warm walls.

For accurate work in the investigation of the Building Research Board and the Industrial Health Research Board, physiological sensations must be interpreted in terms of physical quantities capable of exact measurement. A new criterion of the thermal comfort of an environment, the equivalent temperature, put forward by Mr. A. F. Dufton, of the Building Research Station, has received the approbation of an inter-departmental committee set up by the Medical Research Council and the Department of Scientific and Industrial Research.

This scale of equivalent temperature, which is discussed in a technical paper just published by the Department of Scientific and Industrial Research, is essentially a refinement of the sensation scale. In terms of our sensations we may say, "It is colder now that the sun has gone in," or "Come round the corner, it will be warmer out of the wind." But when we attempt to express "how much cooler" or "how much warmer" it is necessary to have a scale of degrees. Such a scale is conveniently based upon the rate of loss of heat from a heated body, and the equivalent temperature of an environment has been defined as that temperature of a uniform enclosure in which, in still air, a sizeable black body of 75 deg. F. would lose heat at the same rate as in the environment.

A full description of the instrument for recording equivalent temperature, which has been called a eupathescope, is given in the paper just published by H.M. Stationery Office (price 6d.). The title of the paper is "The equivalent temperature of a room and its measurement."

Building and Allied Trades Golfing Society.

The autumn meeting of this Society will take place at Moor Park, Rickmansworth, on Wednesday, October 5. The nearest station to the course is Moor Park (Metropolitan). Singles (medal play) and foursomes on handicap will be played on the High and West courses respectively. There will be prizes for each event, and a scratch prize for the singles. The "Dyke Cup": Concurrently with the singles competition, those members who qualified for the first twenty places in the spring meeting will be eligible to complete the remaining 18 holes for the best net aggregate score over the two meetings. Competitors will be able to commence their rounds from 9.20 a.m. They can choose their own partners if desired, or can be accommodated when they arrive. The annual general meeting will follow the day's play. Those who wish to take part should reply, stating handicap and enclosing a remittance, 15s., not later than September 28, to the hon. secretary, Mr. Hubert H. Hill, W. G. Hill and Son, Monument Station Buildings, King William-street, E.C.4.

NEW BUILDINGS IN LONDON

Bank.—REPAIRS.—The Gresham Committee have under consideration a scheme for the carrying out of repairs and redecoration work at the Royal Exchange. A scheme is now being prepared by the architect to the committee, Mr. Dendy Watney, 4a, Frederick's-place.

Barnet.—HOUSES.—Messrs. E. Owers, Ltd., estate agents, Golders Green tube station, N.W., are connected with a scheme for the erection of houses on Greenhill Park estate.

Blackfriars.—RECONSTRUCTION.—Mr. E. D. Griffiths, 1, Orlando-road, S.W.4, is preparing plans for the proposed reconstruction of the Old Surrey Theatre, Blackfriars-road, S.E.1.

Catford.—EXTENSIONS. — Messrs. Wallis, Gilbert and Partners, 29, Roland-gardens, South Kensington, S.W.7, are the architects for extensions to the factory of Messrs. James Robertson and Sons (Preserve Manufacturers), Ltd., which is in Aitken-road. The builder is Messrs. James Watt, 1, Central-parade, Bromley-road, S.E.6.

Charles-street.—BUILDING.—Messrs. Higgs and Hill, Ltd., Crown Works, South Lambeth-road, S.W.2, are erecting a building in Charles-street and Chesterfield-street, W.1. Messrs. Joseph, 2, Paul's Bakehouse-court, E.C., are the architects.

Church-street, W.8. — REBUILDING. — The Rowley Galleries in Church-street, W.8, propose rebuilding their premises. A contract has been obtained by Messrs. A. E. Symes and Co., of Stratford.

Covent Garden. — REBUILDING. — Messrs. Hood and Huggins, 62, Oxford-street, W.1, have prepared the plans for the rebuilding of the Tavistock Hotel and 1-7, James-street, Covent Garden. The building contract has been secured by Messrs. James Carmichael (Contractors), Ltd., 331, Trinity-road, S.W.18. No sub-contracts have yet been placed. The demolition work is in hand.

Croydon. — ALTERATIONS. — Messrs. J. Walker and Son, 40, Drewstead-road, S.W.16, has secured the building contract for alterations to the Westminster Bank, Ltd.'s, branch bank in Brighton-road.

Croydon. — SHOWROOMS. — New furniture showrooms, bridge, etc., are to be erected at rear of Messrs. Batchelar's premises. The architects are Messrs. George Baines and Son, FF.R.I.B.A., A.I.Struct.E., 121, Victoria-street, S.W.1, and the quantity surveyors are Messrs. L. A. Francis and Sons, Vernon House, Sicilian-avenue, W.C.1, while the builders are Messrs. Allen Fairhead and Sons, Ltd., Enfield, N.

Dagenham. — SCHOOL. — A new Roman Catholic school is to be erected in Goresbrook-road, to the plans of Mr. T. H. B. Scott, F.R.I.B.A., 11, Finsbury-square, E.C.2. The builder is Mr. A. Saunders, Western-road, Brentwood.

Ealing.—BUILDING.—Mr. W. R. Hicks, Borough Engineer and Surveyor, has prepared plans for a new fire station, and the Town Council are now inviting tenders for the work.

East Ham. — CHURCH. — Mr. Charles Spooner, F.R.I.B.A., of Eyot Cottage, Chiswick Mall, W.4, is the architect and Messrs. Hammond and Miles, Ltd., Scrafton-road Works, Ilford, the builders for the new church of St. Paul's, Burges-road, East Ham.

Enfield.—FACTORY.—Mr. T. W. Rhodes, 18, Fairholt-road, N.16, is the builder for a new factory, etc., adjoining St. James's Vicarage, Enfield Highway, for Messrs. N. Yeomans and Co., 49, Grayling-road, N.16. The architect is Mr. L. Beddall Smith, A.R.I.B.A., 142, Lordship-lane, Stoke Newington, N.16, and not as stated in our last issue.

Enfield.—FACTORY.—The Artifex Engineering Works, 6 and 8, Pentonville-road, are to build a factory at Enfield for the manufacture of bakers' and confectioners' machinery. The architect is Mr. Neilson, of Waltham Cross.

Enfield. — SHOPS. — Messrs. Marshall and Tweedy, FF.R.I B.A., 4, Cavendish-place, Cavendish-square, W.1, have been appointed architects for the erection of a block of shops and flats at Village-road, Enfield. The contract has been let to Messrs. Henry Kent, Ltd., of Beacon-road, S.E.13, and the steelwork to Messrs. Redpath, Brown and Co., Ltd., Duncannon-street, W.C.2.

Finsbury-square.—IMROVEMENTS. — Messrs. Marchant, Hirst and Co., 136, Highgate-road, N.W.5, are the builders for improvements to the post-office for the H.M.O.W.

Fleet-street.—ALTERATIONS.—For alterations to the post-office, H.M.O.W. have placed a contract with Messrs. T. Troy and Co., Ltd., 194, Finchley-road, N.W.3.

Fulham.—FACTORY.—Messrs. J. Hatchard-Smith and Son, FF.R.I.B.A., of 11, Haymarket, S.W.1, are the architects for a factory to be erected in Carnwath-road, Fulham, S.W.6. The contractors are Messrs. Holland, Hannen and Cubitts, Ltd., of 1, Queen Anne's Gate, S.W.1, and the contractors for the steelwork are Messrs, Redpath, Brown and Co., Ltd.

Grafton-street. — ALTERATIONS. — Messrs. Perry and Perry, Ltd., 20, Woodstock-street, Oxford-street, W.1, have secured a contract for the reconstruction of premises at No. 39, The plans have been prepared by Messrs. W. A. Lewis and Partners, 11, Finsbury-square, E.C.2.

Greenford.—SHOPS.—The G.W.R. have approved a scheme for the erection of two shops on their property. The company's architect is Mr. P. E. Culverhouse, F.R.I.B.A., Paddington Station, W.2.

Hendon.—ALTERATIONS. — Proposals have been formulated by the licensee, Mr. P. S. H. Leafe, for reconstructions, etc., at the "Greyhound" public-house, Church End, N.W.

Hendon.—ALTERATIONS. — H.M.O.W. have placed a contract with Messrs. F. Parvin, Ltd., Broadway, N.W.7, for alterations to the "Hyde" sorting office, N.W.

Hendon.—EXTENSIONS.—For extensions to the Etna Works, Albert-road, N.W.4, Mr. N. K. Humphris, Ridgside, Woodfield Hill, Coulsdon, has prepared plans. The scheme is for the Hobart Manufacturing Co., Ltd., Charterhouse-street, E.C.1. The builders are Messrs. J. and J. Dean, Ltd., Ruckholt Works, Ruckholt-road, E.10.

Hounslow.—BANK.—A contract has been placed with Messrs. J. Woolland and Son, Ltd., 52, Churchfield-road, Acton, London, W.3, for a branch bank at Hounslow West Underground Station. The plans have been prepared by the Bank's Premises' Department, 37, King William-street, E.C.3.

Kingston.—EXTENSIONS. — Messrs. T. H. Adamson and Sons, 145, High-street, Putney, S.W.15, have secured the contract for the erection of extensions to the First Church of Christ Scientist, Penrith-road. Messrs. Davidson, Son and Sherwood, 32, Clayton-street, Newcastle-upon-Tyne, are the architects. The cost of the work is about £6,000.

Lewisham.—ALTERATIONS.—For alterations to the post office, H.M.O.W. have placed a contract with Messrs. Limpus and Son, Ltd., 7, Kingston Hill, Kingston-on-Thames.

Lewisham.—REBUILDING.—The B.C. has approved the application of Mr. George Kay for the rebuilding of 156 to 162, High-street, Lewisham.

Lewisham.—STATION.—Messrs. F. Liley and Sons, 331, Sydenham-road, Croydon, are erecting a fire station on north side of Reigate-road.

Marylebone.—FLATS.—The L.C.C. are contemplating the erection of flats on the Lilestone estate, near Edgware-road.

Orpington. — CHURCH. — Messrs. George Baines and Son, FF.R.I.B.A., architects, 121, Victoria-street, S.W.1, have been appointed architects for new Methodist church and schools for the Trustees. The scheme is expected to cost about £10,000.

Oxford-street.—BRITISH INDUSTRIES HOUSE. —In giving some brief details of the adaptation as a wholesale buying and display centre of the basement and ground floors of the building in Oxford-street recently occupied by Gamages (West End), we stated in error that conversion would be necessary. Messrs. British Industries House, of 14, Northrow, Marble Arch, W.1, now inform us that "no conversion will be required, as the building is eminently suitable for the purpose for which it is being used. There will, of course, be the erection of stands, which will be effected by the tenants under the direction of Messrs. C. W. Glover and Partners, Abbey House, Victoria-street, S.W.1." The scheme is to offer, in one permanent home, opportunity to manufacturers for sales administration and sample display. A Merchants' Club —open to exhibitors, manufacturers, etc., throughout the Empire—is being organised in conjunction.

Richmond.—HALL.—The Richmond Ice Rink has been acquired by the Coastal Pleasure Piers Syndicate, Ltd., for conversion into a dance cabaret and concert hall, with restaurants, whilst adjoining will be constructed a swimming pool, 185 ft. long, surrounded by a sun beach, etc. Messrs. C. E. Barry, A.R.I.B.A., Parliament-mansions, Victoria-street, S.W.1, and Sydney Clough, F.R.I.B.A., 625, Cecil-chambers, 86, Strand, W.C.2, are the architects.

Romford.—HOUSES.—The R.D.C. are considering 42 houses at Rainham.

Romford.—SHOPS.—Messrs. Crowe and Careless, architects, 74, Great Russell-street, W.C.1, are preparing plans for an arcade of shops in Market-place.

Strand.—REBUILDING.—Plans are being prepared by Mr. W. Braxton Sinclair, F.R.I.B.A., Craig's Court House, Whitehall, S.W.1, for the rebuilding of premises at the corner of the Strand and Essex-street, W.C.2. No building contracts are yet let.

Thornton Heath.—BUILDING.—Messrs. J. B. Sharman, Ltd., West Cliff-road, Ramsgate, have secured the contract for new post office for H.M.O.W.

Twickenham.—HOUSES.—Tenders for 66 "A" type 3-bedroom, non-parlour houses, and 52 "A" type 2-bedroom, non-parlour houses on land at junction of Hospital Bridge-road and Powder Mill-lane, are being invited by the T.C. Mr. Gilbert R. King, Borough Engineer and Surveyor, has prepared the plans.

Walthamstow.—HOUSES.—For 92 houses in Kimberley-road, and 136 of the Essex Hall estate, the T.C. has accepted the estimate of the Borough Engineer and Surveyor to carry out the work by direct labour. This scheme is subject to sanction of the Ministry of Health.

NEW CINEMAS

Harlesden.—The contract for the reinstatement, after fire, of the Grand Cinema in Harlesden High-street, N.W., has been placed with Messrs. H. Darby and Son, 71, Leabridge-road, Leyton. The work is under the direction of the architect, Mr. George Coles, F.R.I.B.A., 40, Craven-street, Strand, W.C.

Hove.—Hove Council have approved the general outline of the pier at Hove proposed by the Hove Pier Theatre and Kursaal Co., Ltd., whose engineers are Messrs. Oliver and Roberts, 6, Broad-street-place, E.C.2. The scheme includes plans for a cinema. The subject will be further discussed when the working drawings of the pier come before the Council. The architect to the company is Mr. A. W. Moore, F.R.I.B.A., 124, Fenchurch-street, E.C.3.

Liverpool.—A contract for the large cinema to be erected at a corner site in Mosspits-lane, Fazakerley, to hold 1,500 persons, has been placed with Messrs. John Williams, Ltd., Collingwood-street, Liverpool. The plans have been prepared by Mr. Lionel A. G. Pritchard, A.R.I.B.A., Leith Buildings, Moorfields, Liverpool. The cost is estimated at about £25,000, and work will commence at once.

Norwich.—Mr. V. E. Harrison, the Carlton Cinema, All Saints Green, has acquired a site at Mile Cross for a new picture theatre to seat approximately 800 persons. The contract has been placed with Messrs. Gill and Son, 28, Rupert-street, Norwich. The plans have been prepared by Mr. J. Owen Bond, F.R.I.B.A., 26, Tombland, Norwich.

Tiverton.—A cinema is proposed by Messrs. Eastmond and Hamlin on a site in Fore-street, Tiverton. Plans have been passed by the Town Council.

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st FEBRUARY, 1932.

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.]

	Masons.	Brick-layers.	Car-penters Joiners.	Plas-terers.	Slaters.	Plum-bers.	Pain-ters.	Lab-ourers.
Aberdare	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Accrington	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Aldershot	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Alfreton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Alnwick	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Altrincham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Ashford (Kent)	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Ashington	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Ashton-under-Lyne	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Aylsham	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Banbury	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Barnsley	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Barnstaple	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Barrow-in-Furness	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Barry	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Basingstoke	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Bath	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bedford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Berwick	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Bexhill	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Birkenhead	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7½	1/2½
Birmingham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bishop Auckland	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Blackburn	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Blackpool	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bognor Regis	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Bolton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bournemouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bradford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bradford-on-Avon	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	11
Braintree	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Brentwood	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Bridgwater	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Bridlington	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Brighton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bristol	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bromsgrove	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Bromyard	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Bungay	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Burnley	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Burton-on-Trent	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bury	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bury St. Edmunds	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Buxton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Cambridge	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Canterbury	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Cardiff	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Carlisle	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chatham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Chelmsford	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Cheltenham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Chester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chesterfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chorley	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Cirencester	1/3	1/3	1/3	1/3	1/3	1/3	1/2	11½
Clacton	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Colchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Coventry	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Cranbrook	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Crewe	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Cromer	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Darlington	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Deal	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Denbigh	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Derby	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Devizes	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	11
Dewsbury	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Doncaster	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Dorchester	1/3	1/3	1/3	1/3	1/3	1/3	1/2	11½
Dorking	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Dovercourt	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Driffield	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Droitwich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Dudley	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Durham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Eastbourne	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
E.Glam.(Mon.Val.)	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Ely	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Exeter	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/0½
Exmouth	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Fakenham	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Felixstowe	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Folkestone	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Frome	1/3	1/3	1/3	1/3	1/3	1/3	1/2	11½
Glossop	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Gloucester	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/0½
Godalming	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Goole	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Gosport	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Grantham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Gt. Yarmouth	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Grimsby	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Guildford	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Halifax	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Harpenden	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Harrogate	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Hartlepools	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Harwich	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Hastings	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Hatfield	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hednesford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hereford	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Herne Bay	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Hertford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hitchin	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hoddesdon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Holt	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Huddersfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Hull	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Hunstanton	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Huntingdon	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Isle of Wight	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Ipswich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Keighley	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Kettering	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Kidderminster	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Kings Lynn	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Lancaster	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Leamington Spa	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Leeds	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Leicester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Leighton Buzzard	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Lichfield	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Lincoln	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Littlehampton	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Liverpool	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7½	1/2½
Llandudno	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Llanelly	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
London—								
12 m. radius	1/7½	1/7½	1/7½	*	1/7½	1/7½	1/6½	1/2½
12-15 m. radius	1/7	1/7	1/7	*	1/7	1/7	1/6	1/2½
Loughborough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Lowestoft	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Luton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Macclesfield	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Maidstone	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Malvern	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Manchester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Mansfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Margate	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Market Harborough	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Matlock	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Melton Constable	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Melton Mowbray	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Merthyr Tydfil	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Middlesbrough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Newark	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Newbury	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Newcastle-on-Tyne	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Newcastle-u-Lyme	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
New Forest	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Newmarket	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Newport, Mon.	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Northampton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Norwich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Nottingham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Nuneaton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Oakham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Oldham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Oxford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Paignton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Peterborough	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Plymouth	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Pontypridd	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Portsmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Preston	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Ramsgate	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Reading	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Redcar	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Redditch	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Reigate	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Retford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Ripon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Rochdale	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Rochester	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Rugby	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Saffron Walden	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
St. Albans	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
St. Helens	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Sawbridgeworth	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Saxmundham	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Scarborough	1/5½	1/5½	1/5½	1/5½	1/5½	1 5½	1/5½	1/1½
Sevenoaks	1/4	1/4	1/4	1/4	1/4	1,4	1/4	1/-
Sheffield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Shrewsbury	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Sittingbourne	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Southampton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Southend-on-Sea	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Southport	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
South Shields	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stevenage	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Stockport	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stockton-on-Tees	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stoke-on-Trent	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stourbridge	1/5½	1/5½	1/5½	1/5½	1/5½	1,5½	1/5½	1/1½
Stourport	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Stowmarket	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Stratford-on-Avon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Stroud	1/4	1/4	1/4	1/4	1/4	1/4	1/3½	1/-
Sunderland	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Swaffham	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Swansea	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Swindon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Tamworth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Taunton	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Thetford	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Torquay	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Totnes	1/4	1/4	1/4	1/4	1/4	1/4	1/3½	1/-
Trowbridge	1/3	1/3	1/3	1/3	1/3	1/3	1/2	11½
Tunbridge Wells	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Uttoxeter	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Wakefield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Walsall	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Walsden	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Warminster	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	11
Warrington	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Warwick	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Wells (Norfolk)	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Welwyn Gar. City	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
West Bromwich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Weston-super-Mare	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Weymouth	1/3	1/3	1/3	1/3	1/3	1/3	1/2	11½
Whitby	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Wigan	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Winchester	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Windsor	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Wisbech	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Wolverhampton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Woodbridge	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Worcester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Worksop	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Worthing	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Wrexham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wycombe	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Wymondham	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
York	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½

*The rate recognised by the National Association of Plasterers, Granolithic and Cement Workers, as and from the 1st June, 1932, is 1/9 per hour.

For Building Trade wages in Scotland, see page 483.

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender, that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given is the latest date when the tender, or the names of those willing to submit tenders, may be sent in, the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; Surveyor S.; Engineer, E

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, etc.

SEPTEMBER 21.

Dublin.—Building.—Alterations to existing ward at Rialto Consumptive Hospital, new kitchen, scullery, store, etc., 1, James's-st., Dublin, for Dublin Board of Assistance. Foley & O'Sullivan, architects, 102-3, Grafton-st., Dublin.

Edinburgh.—Convenience.—Public convenience at North Castle Wynd, for T.C. B.E., 14, Cockburn-st., Edinburgh

Elgin.—Housing—Housing scheme in Bishopmill, for T.C. J. Wittet, F.R.I.B.A.

Fleetwood.—Houses.—100 non-parloured on Flakefleet housing site, for U.D.C. E. and S. Dep. £2 2s.

Hellesdon.—Detached Villa.—Adjoining Mental Hospital, for City of Norwich. City Engineer and Surveyor, Guildhall. Dep. £5.

Perth.—Works.—Cooper and lead work and carpenter's work in covering roofs of City Hall, Perth, with copper, for T.C. T. M'Laren, B.S., 16, Tay-st.

Reading.—Exchange.—Telephone exchange at Caversham, for H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s.

Rochdale.—Painting.—External painting of 36 houses on Ivor-st. estate, for T.C. B.S.

Sunderland.—Alterations.—Also extensions to Ashburn House, Backhouse Park, for school of art, for Corporation. Education Architect, 15, John-st. Dep. £2 2s.

SEPTEMBER 22.

Brethy.—House.—Doctors' house at Orthopaedic Hospital, for Derbyshire C.C. County Architect, County Offices, Derby. Dep. £2 2s.

Dublin.—Lighting.—Electric lighting of libraries at Shankill, Lusk and Whitechurch, for County Libraries Committee. Edward M. Murphy, consulting engineer, 27, Molesworth-st., Dublin. Dep. £1 1s.

Hillside.—Houses.—24 at Hillside, near Montrose, for Angus C.C. Master of Works, Municipal-buildings, Forfar. Dep. £1 1s.

Kingston-upon-Hull. — Schools. — Proposed elementary school (1st portion), Maybury-rd., and proposed elmentary school (1st portion), Pickering-rd., for T.C. D. Harvey, A.R.I.B.A., City Architect. Dep. £1 15s. each.

Plymouth.—Plastering.—(1) External plastering at Stonehouse Town Hall; (2) electricity sub-station and Park Shelter at Beaumont Park; and (3) demolition of 1 and 2, Regent-place and extension of playground at Sutton secondary school, for T.C. J. Wibberley, City Engineer and Architect, Sun-bldgs. Dep. £1 1s. each.

Shankill, etc.—Lighting.—Electric lighting of the libraries at Shankill, Lusk and Whitechurch, for County Dublin Public Libraries Committee. E. M. Murphy, consulting engineer, 27, Molesworth-st., Dublin. Dep. £1 1s.

SEPTEMBER 23.

Hull.—Dwellings.—30 tenement dwellings, New George-st., for T.C. D. Harvey, A.R.I.B.A., City Architect. Dep. £1.

Sandy.—Houses.—21, for Sandy U.D.C. Clerk, Sandy, Beds. Dep. £2 2s.

Tadcaster.—Houses.—16 in Moor-lane, Sherburn-in-Elmet, for R.D.C. H. W. Boardman, E. Dep. £2 2s

SEPTEMBER 26.

Baschurch.—Houses.—6 new houses and 8 sets of farm buildings at Marton Grange Farm, near Baschurch. County Land Agent, 5, Belmont, Shrewsbury.

Caithness.—Houses.—For the erection, alternately in brick and stone, of 100 houses of 3 and 4 apartments, to be built in pairs in various rural districts, for C.C. Sinclair Macdonald & Son, architects, Wick and Thurso. Dep. £3 3s.

Dundee.—Houses.—In Clepington-rd., for T.C. City Quantity Surveyor, 91, Commercial-st.

London.—Repainting.—Cleaning, repainting, etc., of Chalk Farm-rd. bridge and Mitre bridge, for L.C.C. Chief Engineer (C), Old County Hall, Spring-gdns., S.W.1. Dep. £1.

Lydney.—Housing.—20 non-parlour type houses at Tidenham, for R.D.C. G. J. Elliott, S., Highland Villa, Tutnalls, Lydney. Dep. £2 2s.

Nuneaton.—Shelter.—New shelter at Stockingford Recreation Ground, Grove-rd., for T.C. R. C. Moon, B.S.

Sheffield.—Building.—Erection of (1) casualty block, (2) maternity block, (3) theatre block, and (4) nurses' home extension, at City General Hospital, Firvale, for T.C. W. G. Davies, F.R.I.B.A., City Architect. Dep. £2.

Weaverham.—Bungalow.—Bungalow and house, also alterations to shippons at Weaverham, Northwich. Bradbury, Vicar's Cross, Chester.

Weymouth.—Buildings.—Pier buildings at harbour, for G.W.R. E., Paddington Station, W.2. Dep. £2 2s.

Willesden.—Building.—Public convenience (semi-underground) at St. Alban's-rd., Harlesden, for U.D.C. F. Wilkinson, E. Dep. £2 2s

SEPTEMBER 27.

Barry.—Housing.—102 semi-detached non-parlour type 2 and 3-bedroom houses and construction of roads at Buttrills housing estate, Barry, for U.D.C. E. R. Hinchcliff, architect, Council Offices. Dep. £5 5s.

Great Houghton.—Room.—Billiards room as extension to Miners' Welfare Hall. W. T. Lynam, F.S.I., architect and surveyor, Market-chambs., Hemsworth. Dep. £1.

London.—Heating.—Accelerated low-pressure hot water heating, etc., at Chemical research Laboratory, Teddington, and supply and erection of vertical steam boiler at H.M. Stationery Office, Harrow, for H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 each.

Twickenham.—Houses.—66 "A" type 3-bedroom, non-parlour houses, and 52 "A" type 2-bedroom, non-parlour houses on land at junction of Hospital Bridge-rd. and Powder Mill-lane, for T.C. Gilbert R. King, B.E. and S. Dep. £2 2s.

SEPTEMBER 28.

Aldershot.—Alterations.—To Post Office, for H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1.

Doddington.—Alterations.—Also additions to casual wards at Institution, for Isle of Ely C.C. R. S. W. Perkins, C.S., County Hall, March.

East Sussex.—Repainting.—Of 14 steel bridges, for C.C. H. E. Lunn, C.S., County Hall, Lewes. Dep. £5

Liverpool.—Dwellings.—In Gill-st. and Trowbridge-st., for Corporation. Town Clerk, Municipal-bldgs., Dale-st. Dep. £2 2s.

Liverpool.—Dwellings.—In Blackstock-st., for Corporation. Town Clerk, Municipal-bldgs., Dale-st. Dep. £2 2s.

Liverpool.—Houses.—On Huyton Farm estate, Town Clerk, Municipal Offices, Dale-st. Dep. £1 1s.

Prestwich.—Painting.—Exterior painting and graining of 54 of Council houses on Bent Hill estate, for U.D.C. E. and S.

SEPTEMBER 29.

Manchester.—School.—Benchill Municipal School, Wythenshawe, for E.C. Surveyor's Department, Education Offices, Deansgate. Dep. £2 2s.

SEPTEMBER 30.

Downham.—Wards.—New casual wards adjoining the Poor Law Institution, for Public Health and Assistance Committee of Norfolk C.C. C. J. Norton, A.R.I.B.A., architect, Stracey-rd., Norwich. Dep. £1 1s.

OCTOBER 1.

Ardee.—Installation.—Electrical installation of Mental Hospital, Ardee, for Committee of Management of Louth C.C. J. P. Tierney & Co., consulting engineers, 44, Kildare-st., Dublin, C.17. Dep. £5 5s.

Long Crendon.—Cottages.—8 at Shabbington, for R.D.C. A. J. Webb, architect, The Cottage, Long Crendon, Thame. Dep. £1 1s.

OCTOBER 3.

***Aldershot.**—Houses.—24 semi-detached, Whyte-av. and Gnildford-rd., for Aldershot T.C. T.C., Municipal-bldgs. Dep. 10s.

***Chelmsford.**—Additions and Alterations.—To Nurses' Home, for Essex C.C. County Architect, County Hall, Chelmsford. Dep. £2 2s.

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15, North Audley Street, London, W.1

***Ealing.**—Fire Station.—For Borough of Ealing. T.C., Town Clerk's Office, Town Hall, Ealing, W.5. Dep. £3 3s.

Sunbury-on-Thames. — Houses. — 8, on land adjoining Halfway Cottages, Upper Halliford, for U.D.C. Harold F. Coales, S. Dep. £2 2s.

OCTOBER 4.

Yiewsley and West Drayton.—Cottages.—38 non-parlour cottages at Falling-lane, Yiewsley, for U.D.C. W. T. Morgan, S. Dep. £2 2s.

OCTOBER 5.

Clacton. — Conveniences. — Opposite Connaught-gdns., East Cliff, for U.D.C. W. Aiston, S. Dep. £2.

***Reading, Bucks.**—Telephone Exchange.—At Earley, for H.M.O.W. Contracts Branch, H.M.O.W., King Charles-st., London, S.W.1. Dep. £1 (cheques payable to the Commissioners, H.M. Office of Works).

OCTOBER 6.

Harrogate.—Building.—Tea house and promenade, Valley-gardens, for T.C. C. E. Rivers, B.E. and S. Dep. £2 2s.,

OCTOBER 7.

***Manchester, Newton Heath.**—Flats.—For City of Manchester. Housing Director, Town Hall. Dep. £2 2s.

OCTOBER 10.

North Elmsall. — House. — Whole or separate tenders, new school and caretaker's house at Harewood-lane, North Elmsall, for West Riding C.C. Education Officer, County Hall, Wakefield.

OCTOBER 11.

***Various Districts.**—Works and Repairs.—To public buildings, for Contracts Branch, H.M.O.W., King Charles-st., London, S.W.1. Dep. 10s. 6d. (payable to the Commissioners, H.M. Office of Works).

OCTOBER 14.

***Various Districts.**—Works and Repairs.—To public buildings, for Contracts Branch, H.M.O.W., King Charles-st., London, S.W.1. Dep. 10s. 6d. (payable to the Commissioners, H.M. Office of Works).

OCTOBER 17.

***Prestwich, near Manchester.**—(County Mental Hospital), alterations and additions. Clerk, County Offices, Preston. Dep. £5 5s.

OCTOBER 23.

Turkey. — Pavilion. — Construction works in the large new pavilion of Ankara Model Hospital. Apply, Ministry of Health.

MATERIALS, etc.

SEPTEMBER 24.

Whiston.—Builders' Materials.—For Lancs C.C. R. Hartley, Clerk to Guardians' Committee, Area 12—Prescot, Warrington-rd., Whiston, Prescot.

SEPTEMBER 26.

Cairo.—Pipes.—Cast-iron pipes and accessories for Egyptian Ministry of Public Works. Department of Overseas Trade, 35, Old Queen-st., Westminster, S.W.1. (G.X. 11,743.)

SEPTEMBER 28.

Wilts.—Stone.—Road stone, chippings and gravel, for C.C. H. S. Ganderton, C.S., Trowbridge.

OCTOBER 24.

South Africa.—Paints, etc.—For South African Railways and Harbours Administration. Dept. of Overseas Trade, Westminster, S.W.1. (Ref. B.X. 7407.)

ENGINEERING, IRON AND STEEL.

SEPTEMBER 21

Huyton-with-Roby.—Sewerage.—Provision, laying and jointing surface water and foul sewers, together with manholes, and construction of pumping station and building, for U.D.C. H. B. Ward, consulting engineer, 26, North John-st., Liverpool. Dep. £3 3s.

SEPTEMBER 22.

Nottingham. — Drainage. — 3½ miles, mostly in tunnel, of brick sewers, varying from 8 ft. 6 in. to 7 ft. in diameter, together with various chambers and other appurtenant works, for T.C. T. Wallis Gordon, City E. and S. Dep. £5 5s.

SEPTEMBER 26.

Finchley.—Culvert.—Culverting approximately 120 yds. of Mutton Brook with 4-ft. concrete tubes, near Bishops-av., for U.D.C. Percival T. Harrison, E., 9, The Hawthorns, Regents Park-rd., Finchley, N. Dep. £1.

SEPTEMBER 28.

London.—Sewerage.—24-in. concrete pipe sewer and filling in of existing 3 ft. by 2 ft. brick sewer under L. and N.E.R between Amhurst-pk. and Dunsmure-rd., for Hackney B.C. Percival Holt, B.E. and S. Dep. £3 3s.

Merton and Morden.—Sewerage.—At site of refuse dispohsl works, Garth-rd.—providing and erecting approximately 820 yds. cleft oak fencing with concrete posts; constructing roadway into works in reinforced concrete; erecting lavatory, messroom and office, together with drainage and other works; supplying and erecting one weighbridge; Private street works—John's-lane, Morden, construction of 77 yds. 6 in. soil sewer and 117 yds. 6 in. surface water sewer, together with manholes, etc.; painting and decorating interior of 100 houses on the Whatley housing estate, Merton, for U.D.C. G. Jerram, E. and S. Dep. £1.

SEPTEMBER 30.

Lleyn.—Sewerage.—Supplying and laying of approximately 146 lin. yds. of 6-in. dia. stoneware pipes, 3,719 yds. of 9-in. stoneware pipes, 515 lin. yds. of 12-in. stoneware pipes, 506 lin. yds. of 9-in. cast-iron pipes, and 267 lin. yds. of 9-in. cast-iron pipes, as sea outfall, with construction of manholes and other works, for sewerage of Morfa Nevin, for R.D.C. S. L. Richards, chartered civil engineer, 5, Dumfries-pl., Cardiff. Dep. £2 2s.

Wath-upon-Dearne.—Bridge.—Fixing new steel swingbridge over canal in Moor-rd., Wath-upon-Dearne, to replace existing wooden bridge, for U.D.C. H. Cranage, E. and S.

OCTOBER 1.

Alexandria, Egypt.—Transformers.—Supply and installation of electric cables, switchgear, transformers and electrically driven centrifugal pumps in Port of Alexandria, for Egyptian Government. Chief Inspecting Engineer, Egyptian Government. 41, Tothill-st., London, S.W.1. Payt. 10s.

Shrewsbury.—Sewerage.—Waterworks construction for parish of Bicton, for T.C. Fred. J. & Edw. Wilson Dixon, engineers, and W. Arnold Hewitt, Borough Water Engineer. Dep. £10.

ROAD, SEWERAGE AND WATER WORKS.

SEPTEMBER 21.

Bolton.—Sewering.—Sewering and street works on Johnson Fold housing estate, for Corporation. B.E. and S.

Fife.—6,500 sq. yds. of single coat asphalt on road within burgh of Buckhaven, for C.C. Antony Walker, S., 1, Swan-road, Kirkcaldy. Dep. £2 2s.

Folkestone.—Resurfacing.—Rendezvous-st. from High-st. to Grace-hill, and Guildhall-st. from Queen's Hotel to Cheriton-rd., for T.C. E. L. Allman. A.M.Inst.C.E., Acting B.E.

Gainsborough. — Street. — Construction of new street, including carriageway, footpaths, sewers, etc., for U.D.C. S. Algar, E. and S. Dep. £2 2s.

Salisbury.—Making-up.—Of Queen Alexandra-rd. (second part), for T.C. City E. Dep £1 1s.

SEPTEMBER 22.

Isle of Thanet.—Making-up.—Albion-rd., Cross-rd., Epple Bay-rd. and Lyell-rd., Birchington, for R.D.C. G. L. Butterworth, S., Station-rd., Birchington. Dep. £2 2s.

Luton.—Sewer.—Laying storm water sewer, relaying kerb and channel, flagging footways and surfacing carriageway, in Brooms-rd. and Derwent-rd., for T.C. J. W. Tomlinson, B.E. and S., 12, Upper George-st. Dep. £1 1s.

Wembley.—Making-up.—Oakington Manor-drive, part 1 (approx. length 400 yds.), and Oxenpark-av, part 1 (approx. length 265 yds.), for U.D.C. C. R W. Chapman, E. and S. Dep. £1 1s. each.

SEPTEMBER 23.

Maldon.—Roads.—Roads and sewers on Park Drive housing estate, for T.C. B.E. Dep. £2 2s.

SEPTEMBER 24.

Chorleywood.—Making-up.—Station-rd., Hillside-rd., Haddon-rd., South-rd. and North-rd., for U.D.C. W. H. Scott, S. and E.

Coulsdon and Purley.—Making-up.—Of Copse-hill, Purley (part of), and Hillcrest-rd., Kenley, for U.D.C. Gilbert A. Ballard, E. and S. Dep. £1 1s. each.

Ilford.—Making-up.—Of Ashurst-drive (part of), Brockenhurst-gardens, Buxton-rd., Eton-rd. (part of), Elstree-gardens, Evanston-gardens, Fairway-gardens, Southbourne-gardens, South Park-cres., Staines-rd. (part of), Tylehurst-gardens, The Drive (part of), Vine-gardens and Yoxley-drive, for T.C. B.E. and S. Dep. £2 2s. each street.

SEPTEMBER 26.

Finchley.—Sewers.—100 yds. of 9-in. soil sewer, with incidental works, on Arden estate, for U.D.C. Percival T. Harrison, E., 9, The Hawthorns, Regent's Park-rd., Finchley, N.3. Dep. £1.

Moseley.—Sewers.—780 yds. of stoneware pipe foul water sewers, with incidental works in Alcester-rd. and Uffculme Park, Moseley, for Birmingham Public Works and Town Planning Committee. City E. Dep. £2.

Newport (Mon.).—New road from Emlyn-st. to Corn-st., for C.B. B.E. Dep. £10.

Romford.—Making-up.—Of Oaks-av., Hillview av., Wainfleet-av., Maidstone-av., Hayden-way, for U.D.C. F. G. Beaumont, E. and S. Dep. £2 2s.

SEPTEMBER 27.

Hailsham.—Road.—Concrete road at Arlington-rd., for R.D.C. W. O. Humphery, E. and S., 17, London-rd. Dep. £1 1s.

Kent.—Roads.—Surfacing with asphalt, two-coat work, 3 in. in thickness, of about 14,000 super yds. of concrete carriageway on Orpington by-pass, and about 3,350 super. yds. on the Bexley by-pass, which is also concrete, for C.C. H. T. Chapman, C.S., St. Peter-st., Maidstone.

Twickenham.—Roads.—Laying of approximately 430 yds. of soil and surface water sewers, and construction of builders' roads, on land at junction of Hospital Bridge-rd. and Powder Mill-lane, for T.C. G. R. King, B.E. and S. Dep. £1 1s.

SEPTEMBER 28.

Hemworth.—Sewer.—691 yds. lin. of 15-in. stoneware sewer and 487 yds. lin. of 12-in. stoneware sewer with manhole and appurtenant works in South Elmsall and South Kirby, for R.D.C. W. T. Lynam, E.

London.—Paving.—Heybridge-av., Streatham, for Wandsworth B.C. E. J. Elford, B.E., 215, Balham High-rd., S.W.17.

SEPTEMBER 29.

Lambeth.—Making-up.—And paving of roadways and footways, together with the incidental works, of Roxburgh-rd. and Bewlys-rd., for T.C. Osmond Cattlin, M.Inst.C.E., F.S.I., B.E., Town Hall, Brixton-hill, S.W.2. Dep. £1 1s.

Public Appointments

SEPTEMBER 30.

***Chepstow, Mon.**—Clerk of Works.—At Port Skewett. Clerk, Council Offices, Chepstow.

PROPOSED NEW BUILDINGS & OTHER WORKS*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council R.D.C. for Rural District Council; E.C. for Education Committee; B C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E. for Board of Education; M.W.B. for Metropolitan Water Board; Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; Surveyor, S.; Engineer, E.

Alnwick.—To provide accommodation for tenants of slum houses at Radcliffe, R.D.C. propose houses to cost £50,000 and looking for site. S.

Ashton-under-Lyne.—Highways Committee propose widening Alma Bridge, which spans Tame at Dukinfield Boundary. B.S.

Batley.—Electricity transformer sub-station at White Lee for Electricity Dept. Tenders invited.

Bedlington.—32 houses for U.D.C. at Stakeford. S.

Biggleswade.—R.D.C. approved: Rebuilding the "Black Horse" public-house, Tempsford, for Wells & Winch, Ltd.

Birmingham.—Factory premises adjoining works of J. Lucas, Ltd., Forman's-rd., Sparkhill.

Bishops Stortford.—U.D.C. approved: 84 houses, South-rd., A. Clark; house in Thorley-hill, 7 lock-up garages in Portland-rd., H. T. White.

Blackpool.—T.C. approved: 6 houses, Blenheim-av., Bryning & Done; 6 houses, Park-rd., F. Potts; 6 houses, Park-rd. and Hartford-av., S. A. Howard.

Blyth.—It is proposed that T.C. purchase land in Cowpen-rd. for houses.

Buxton.—Flint & Saynor, 5, The Quadrant, architects for branch at Burbage for Whaley Bridge and Buxton Co-operative Society, Ltd.

Chippenham.—R.D.C. passed plan for new gospel hall at Lacock, for Western Evangelical Trust.

Desborough.—Rigid Containers, Ltd., to erect factory, Rushden-rd.

Doncaster.—T.C. to erect 78 houses on Warmworth site.

Dumbarton.—C.C. erecting 150 new houses at Admiralty Cottages district, near Balloch Station.

Easington.—J. R. White, County Architect, North Riding C.C., reported to Committee for Care of Mentally Defective on proposed adaptation of Poor Law Institution as institution for mentally defectives.

Falkirk.—Wing to be added to District Royal Infirmary, Mayor-rd. W. Gibson, architect.—Falkirk Memorial Nursing Association to carry out extension to home.

Fleetwood.—Council proposing on foreshore floral hall on island site approached from promenade by ornamental bridges, roofing with glass of present open-air swimming-bath, and erection adjacent to this of large domed dance hall.

Folkestone.—T.C. instructed Acting B.E. and S. to prepare estimate for continuation of promenade at East Cliff.—Special Committee of Council been set up to consider proposal for bathing pool on foreshore.

Frome.—U.D.C. received from M.H. authority to obtain tenders for houses at Summer-hill. Tenders to be invited.

Gateshead-on-Tyne.—T.C. received sanction for slum clearance scheme in Barn Close district which will involve provision of houses for 445 families. Plans by B.S.

Gillingham.—Corporation been approached by Medway Towns branch of Workers' Educational Association with request to provide building from which books belonging to County Library could be issued.

Glasgow.—At Ednam-st. new £6,000 church halls to be erected. J. Aitchieson, architect, 170, Hope-st.—School at Dixon-rd., Crosshill, for R.C. children. William McCaig, Education Architect, 129, Bath-st.

Grange-over-Sands.—Board of Management of Augustinian Sisters' Convalescent Home, Boarbank Hall, propose chapel and adapting existing edifice into additional accommodation for home.

Grantham.—Parochial Council of Sedgebrook Parish Church propose restoration of roof at £800.

Halifax.—B.S. been instructed to prepare plans and estimates for extensions to pavilion at Siddal-pk. for branch library.

Halifax.—G. R. Oddy, L.R.I.B.A., Ward Ends'-chams., architect for Sunday schools and caretaker's house for Northowram Ebenezer Chapel Trustees.

Harrogate.—T.C. considering borrowing £12,750 for 32 houses at Ripon-rd., for accommodation of people who will be displaced by clearance of areas in Union-st., Chapel-court and Northumberland-court.

Hawick.—T.C. approved: A. Scott & Son, 6 semi-detached villas, Leaburn.

Hindley.—Council instructed S. to prepare plans for 71 houses.

Inverness.—Department of Health approved 34 four-apartment cottages by Corporation at Daleneigh.

Kingswood.—Council submitted plans to Ministry for 16 houses at Orchard-rd. and 6 at Woodland-terr.

Largs.—Site for church for United Free Church of Scotland (Catinians) been chosen in Brisbane-st.

Lazenby.—Bus stands. South Lackenby and Wilton-rd. junction, for U.D.C. S.

Leeds.—C. F. Napper, Harrogate, proposes 32 houses at Whitehall-rd. Tenders invited.

Leith.—Extension and restoration scheme to take place at North British Storage and Transit Co.'s warehouse, etc. Plans by Engineering Department, L.N.E. Railway Offices, Waterloo-place, Edinburgh.

London (Lewisham).—B.C. received L.C.C. permission to erection of convenience at junction of Brookehowse-rd. and Swallands-rd., Bellingham. B.S. preparing plans.—Plans passed:—H. F. Thoburn, 13 houses and garages, Madeira-av., Elstree-hill and Warren-av.; Highfield Estate, Ltd., 8 houses, Bankhurst-rd.; Pearsons, 9 houses, Dunoon-rd. and Honor Oak-rd.; G. T. Harman, 5 houses, Thornsbeach-rd.; P. B. Dannatt, premises, Merton-place; W. F. Owsley, public convenience, Capstone-rd., Downham; W. R. Hindmarsh & Co., houses, Canonbie-rd., Forest Hill; S. Gee, houses, Panmure-rd., Sydenham; Pearsons, houses, Dunoon-rd., and Honor Oak-rd. Forest Hill; A. J. Glock, lay-out of houses in road No. 4, Hall Park estate, Catford; R. B. Rowell, 10 houses, De Frene-rd.

Luton.—T.C. approved:—alterations to premises of Luton Industrial Co-operative Society, Ltd., 19-21, New Bedford-rd., and extension of the Society's showrooms at the rear of New Bedford-rd.; A. H. Horne, 18 houses, Runley-rd.; G. A. Peck, 15 houses and a shop, St. Catherine's-av.; R. V. How, 8 houses, Beechwood-rd.; G. Kingham, 8 houses, Beechwood-rd.; P. Butterfield, 8 houses, Sunridge-av.; A. E. Smith, 8 houses, Oakley-rd.; A. J. H. Fountain, 6 houses, Gardenia-av.; H. Abbott, 4 houses, Beechwood-rd.; F. J. Wingrave, 4 houses, Blundell-rd.; F. J. Millard, 4 houses, Icknield-rd.

Meriden.—R.D.C. approved: alterations and additions to inspector's house at Police Station, Coleshill, for Warwickshire C.C.; 4 shops in Millison's Wood, Meriden, A. Tarplin.

Moathill.—Cupar Corporation to carry out new housing scheme. J. M. Alexander, Council Offices, St. Catherine's-st., Cupar.

Newcastle-on-Tyne. — Y.M.C.A. Boys' Club, Fenkle-st., proposed to purchase and reconstruct Primitive Methodist Church in Maple-st. at £2,500. —E. Hindmarsh & Co., 10, Neville-st., architects for alterations to 44, Scotswood-rd., for J. Hewitt. —Plans approved for warehouse, High Bridge, for R. Ward & Sons, printers, High Bridge.

North Shields.—Shields Ice and Cold Storage Co. to carry out additions to ice factory in Brewhouse-pk. Plans by A. K. Tasker, Trinity-bldgs., Newcastle-on-Tyne.—F. R. N. Haswell & Sons, 77, Tyne-st., North Shields, taking out plans for alterations to "Uncle Tom's Cabin" public-house.

Paisley.—Reconstruction and additions at 8, Thread-st. John Davidson & Sons, architects, High-st.

Rochdale.—E.C. propose two additional classrooms at Fleece-st. Council schools, and alterations to Spotland senior girls' school and Oakenrod senior schools for boys. B.S.

Rothwell (Northants).—U.D.C. are considering schemes for improving gas works; reorganising its sewage works; building houses in two localities; transforming one of the main entrances to town; and wiping out drainage defect.

Royston.—U.D.C. received notice from C.C. of intention of improvements to canal bridge, near "Ship Hotel."

Shoreham.—U.D.C. approved plans provisionally for lay-out of roads and 90 houses at junction of Eastern-av. and Middle-rd., for L. Cohen and E. Davis; and lay-out of land on Kingston Manor estate, Upper Shoreham-rd., for same firm, for about 452 houses.

Stretford.—U.D.C.'s surveyor had been in collaboration with Superintendent of Parks and submitted estimate of cost for acquisition of land, lay-out, conveniences, shelters, etc., approximating £6,750, in connection with proposal to acquire land adjacent to Moss-pk. Council school in Low Moss-lane, for recreation ground.—Plans passed: 30 houses, Belford-rd., McLellan & Abel; 20 houses, Kings-rd. and Dean-av., Sparke & Stephens, Ltd.; works extension, Westinghouse-rd., Southern Oil Co., Ltd.

Sunderland.—It is proposed to carry out alterations to "Royal Hotel" for Newcastle Breweries, Ltd. Architects, Oswald & Sons, Worswick-st., Newcastle.—Alterations to be carried out to Redby Council school and manual instruction centre provided at £244.—O. T. Mark, Education Architect.

Uttoxeter.—U.D.C. recommend scheme be submitted to M.H. for 127 new houses.

Weston-super-Mare. — Governors of Weston-super-Mare Queen Alexandra Memorial Hospital approved plans for new nurses' home and hospital league headquarters, together with covered shed for parking of motor-cars.

Whickham.—Tenders not yet invited for extensions to Memorial Hospital. Architect, S. J. Stephenson, 5, Saville-place, Newcastle.

Whitehaven.—J. Stephenson Stout, L.R.I.B.A., 36, Lowther-st., prepared plans for warehouse premises for Smith Bros. (Whitehaven), Ltd., North Shore.

Whitley Bay.—Tenders not invited for three shops with flats above and two dwelling houses. F. R. N. Haswell & Sons, 77, Tyne-st., North Shields, architects.

Whitwood.—Castleford U.D.C. seeking borrowing powers to acquire site on Leeds-Pontefract main road as housing site.

FIRES.

York.—Disastrous fire at Ben Johnsons, Ltd., art printers, which resulted in loss of over £100,000, rebuilding has been entrusted to W. J. Swain, M.I.Struct.E., architect, Westminster-chambers, 7, Victoria-st., London, S.W.1. No building contracts have yet been placed.

See also List of Contracts, Competitions, etc.

PRICES CURRENT OF MATERIALS.*

Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry

PRINCIPAL CHANGES OF THE WEEK.—Lead, in all forms, drops in price by £1 per ton. Turps goes up by 2d. per gallon.

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 3 6
Second Hard Stocks	3 18 6

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
"Phorpres"	2 11 3	Flettons, B'ln'se	3 5 3
Flettons at King's Cross	2 11 3	Best Blue Pressed Staffs	9 5 0
Do., grooved for Plaster	2 13 3	Do. Bullnose	9 15 0
		Blue Wire Cuts	7 5 0

White Midhurst Facing Bricks (delivered London site) 5 0 0

"Phorpres" Whites (do.) 3 17 3

"Phorpres" Rustic Facing Bricks, delivered Central London

Best Stourbridge Fire Brick :—per 1,000 3 12 3

2½ in.	8 11 0	3 in.	10) 0

GLAZED BRICKS—

Best White Ivory and Salt Glazed Stretcher	21 0 0	D'ble Str'tch'rs	29 10 0
		D'ble Headers	26 10 0
Headers	20 10 0	One Side and two Ends	30 10)
Quoins, Bullnose and 4½ in. Flats	27 10 0	Two Sides and one End	31 10)
		Splays, and Squints	28 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.
Delivered London.

	s. d.		s. d.
2 in. per yd. super	1 11	3 in. per yd. super	2 9
2½ in. " "	2 4	4 in. " "	3 6

	s. d.	
Thames Ballast	8 0	per yd.
Pit Sand	11 0	" "
Thames Sand	11 0	" "
Best Washed Sand	11 6	" "
⅜ in. Shingle for Ferro-Concrete	8 6	" "
½ in.	11 0	" "
½ in. Broken Brick	10 6	" "
Pan Breeze	8 0	" "

delivered 2 miles radius Paddington.

Per ton delivered in London area in full van loads.

Best Portland Cement. British Standard Specification. Test	
In Jute Sacks (11 to ton)	£2 4 9 to £2 6)
In Free Paper Bags (20 to ton)	2 6 0 to 2 8)
Alongside Vauxhall in 80 Ton Lots	
Jute Sacks (11 to ton)	1 17 9
Free Paper Bags (20 to ton)	1 19 0
Ferrocrete per ton extra on above	0 7 6
Vitocrete per ton extra on above	0 7 6
Lightning Brand Aluminous Cement in Jute Sacks (20 to ton)	5 2 9 to 5 8 3

NOTE.—Jute Sacks are charged 1s. 6d. each and credited 1s. 6d. each nett if returned in good condition within three months carriage paid.

Super Cement (Waterproof) Paper Bags free	3 16)
Ciment Fondu (F.O.R. Works)	4 15 0
Roman Cement	6 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
" " Pink	5 10 0
Plaster, Coarse, Pink	3 0 0
" " White	3 12 6
" Fine	4 12 0
Sirapite, Coarse	3 9 0
" Finish	3 17 0
Grey Stone Lime	2 10 9
Chalk Lime	2 10 9
Best Ground Blue Lias Lime	1 17 6
Hair per cwt.	2 2 6
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months carr. pd.

Stourbridge Fireclay in s'cks 37s. 0d. per ton at rly. dp.

STONE.

	s. d.
BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 10
BEER STONE.—RANDOM BLOCK— Free on rail at Seaton Station per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. per ft. cube	3 1½

Selected approximate size one way, 1d. per cubic foot extra; selected approximately three sizes or for special work, 3d. per cubic foot extra.

PORTLAND STONE—

Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park Paddington, G.W.R., per ft. cube	4 4½
Do. do. delivered on road waggons at above stations, per ft. cube	4 5½

White basebed, 3d. per ft. cube extra.

NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

CHILMARK—RANDOM BLOCK—

At Nine Elms, per ft. cube	3 11

HOPTON-WOOD STONE—

F.O.R. Quarries, Wirksworth, Derbyshire,	s. d.
Random blocks from 10 ft. and over P. ft. cb.	14 0
Sawn two sides "	22 6
Sawn three or four sides "	27 6

YORK STONE, BLUE—*Robin Hood Quality.* Delivered at any Goods Station, London.

6 in. sawn two sides landings to sizes (under 30 ft. super) Per ft. super	5 6
6 in. rubbed two sides, ditto "	6 0
3 in. sawn two sides slabs (random sizes) "	2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) "	1 6½
2½ in. to 2 in. ditto, ditto "	1 3½

HARD YORK—
Delivered at any Goods Station, London.

	s. d.
Scappled random blocks Per ft. cube	6 3
6 in. sawn two sides landing to sizes (under 40 ft. super)	
Per ft. super	5 1½
6 in. rubbed two sides, ditto "	6 1½
4 in. sawn two sides slabs (random sizes) "	3 1½
3 in. ditto ditto "	2 8
2 in. self-faced random flags Per yd. super	8 0

CAST STONE.

Delivered in London area in full van loads, per ft. cube: Plain, 8s. 6d.; Moulded, 9s. 6d.; Cills, 10s. 0d.

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£24 10	3 × 6	£17 0
4 × 9	20 0	3 × 11	19 10
4 × 8	20 0	2 × 11	19 10
4 × 7	18 0	3 × 9	19 10
3 × 8	18 0	2½ × 9	19 10
3 × 7	18 0	3 × 4½	17 10
2½ × 7	18 0	3 × 4	17 10

PLANED BOARDS.

1 × 11	£22 10	1 × 9	£21 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
⅜	16/-	1¼	25/-
½	17/-	1½	27/6
1	20/-		

TONGUED AND GROOVED FLOORING.

Inches.	per sq.
1	21/-
1¼	26/-
1½	27/6

MATCHING (BEST).

Inches.	per sq.
⅜	15/-
½	16/6
1	20/-

BATTENS.	s. d.
Ins.	
⅞ × 2 per 100 ft.	2 0

SAWN LATHS.

	s. d.
Per bundle	2 3

1 INCH AND UP THICK.
Average price for prime quality.

	£ s. d.
Dry Austrian Wainscot, per ft. cube	0 15 0
Dry American and/or Japanese Figured Oak, per ft. cube	0 12 0
Dry American and/or Japanese plain Oak, per ft. cube	0 10 0
Dry sq. edged Honduras Mahogany, per ft. cube	0 14 0
Dry log-cut Honduras Mahogany, per ft. cube	0 16 0
Dry Cuba Mahogany, per ft. cube	1 1 0
Dry Teak, per ft. cube	0 14 0
Dry American Whitewood, per ft. cube	0 10 0
Best Scotch Glue, per cwt.	£4 10 0 to —
Liquid Glue, per cwt.	4 7 0 to 5 10 0

SLATES.

First quality slates from Bangor or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.		£ s. d.
24 by 12	30 0 0	18 by 10	16 10 0
22 by 12	26 10 0	18 by 9	14 12 6
22 by 11	24 10 0	16 by 10	14 5 0
20 by 12	24 0 0	16 by 8	11 0 0
20 by 10	20 2 6		

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons.

	Per 1,000. f.o.r. London.
Best machine-made tiles from Broseley or Staffordshire district	£4 10 0
ditto hand-made ditto	5 3 6
Ornamental ditto	5 8 6
Hip and valley tiles (per dozen) { Hand-made	0 9 6
{ Machine-made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

R.S. Joists, cut and fitted	£11 0 0
Plain Compound Girders	12 0 0
" Stanchions	15 0 0
In" Roof Work	18 0 0

MILD STEEL ROUNDS.—To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	12 0 0	⅜ in. to ½ in.	10 15 0
⅜ in.	11 0 0	⅝ in. to 2½ in.	10 10 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Standard Wrot. Mild Steel Tubes and Tubulars Sizes ⅛ in. to 6 in.	Genuine Wrot. (Puddled) Iron Tubes and Tubulars Sizes ⅛ in. to 6 in.	Standard Fittings Sizes ⅛ in. to 6 in.	Standard Flanges Sizes ⅛ in. to 6 in.
	%	%	%	%
Gas	65	52½	57½	70
Water	61½	48½	52½	65
Steam	57½	45	47½	60
Galv. gas	52½	40	47½	60
Galv. water	47½	35	42½	55
Galv. steam	42½	30	37½	50

C.I. HALF-ROUND GUTTERS—London Prices ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	11d.	1/5	5d.
3½ in.	11½d.	1/7	5d.
4 in.	1/-	1/9	5d.
4½ in.	1/1½	2/-	6d.
5 in.	1/5	2/2	8d.
O.G. GUTTERS.			
3 in.	1/1	1/11	5d.
3½ in.	1/2	1/11	5d.
4 in.	1/2½	2/-	5d.
4½ in.	1/4	2/4	6d.
5 in.	1/6½	2/8	8d.

RAIN WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock Branches. angles, stock angles.
2 in.	1/3½	1/9 2/7
2½ in.	1/4½	2/- 3/1
3 in.	1/8½	2/6 3/9
3½ in.	2/1½	3/- 4/4
4 in.	2/5	3/7 5/3

Connections—50 per cent. off above prices.
Tonnage allowance—4 ton lots, 5 per cent.
2 ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices ex Works.

	Pipe, angles, stock angles.	Bends, stock Branches.
2 in. per yd. in 6 fts.	1 11	1 6½ 1 10½
2½ in. "	2 3½	1 8½ 2 4
3 in. "	2 4½	1 10½ 2 9½
3½ in. "	2 7	2 4 3 3
4 in. "	2 11	2 7½ 3 9

L.C.C. COATED DRAIN PIPES—London Prices ex Works.

	Pipe, angles, stock angles.	Bends, stock Branches.
	s. d.	s. d. s. d.
3 in. per yd. in 9 ft. lengths	3 4	4 3 6 8
	cwt. qr. lbs.	
4 in. "	1 1 20	4 7 5 2 8 10
5 in. "	1 2 22	6 0 9 0 14 3
6 in. "	2 0 6	6 8 10 11 18 1

Gaskin for jointing 41/- per cwt.

IRON—	Per ton in London. £ s. d.	£ s. d.
Common bars	10 10 0 to	11 0 0
Staffordshire Crown Bars— Good merchant quality	10 15) to	11 10 0
Staffordshire Marked Bars	14 0 0 ...	15) 0
Mild Steel Bars	9 10 0 ...	10 0 0
Steel Bars, Ferro-Concrete quality, basis price	8 0 0 ...	9 0 0
Hoop iron, basis price	11 0 0 ...	12 0 0
" Galvanised	27 0 0 ...	28 0 0
Soft Steel Sheets, Black— Ordinary sizes, to 20 g.	11 0 0 ...	11 10 0
" " " 24 g.	12 0 0 ...	13 0 0
" " " 26 g.	14 0 0 ...	15 0 0
Sheets Flat Best Soft Steel, C.R. and C.A. quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	13 10 0 ...	14 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	14 10 0 ...	15 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	17 10 0 ...	18 10 0
No. 1 quality £4 per ton extra.		
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9 ft. to 20 g.	13 0 0 ...	14 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	14 10 0 ...	15 10 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	16 10 0 ...	17 10 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	18) 0 ...	19 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	20) 0 ...	22 0)
Best Soft Steel Sheets, 26 g.	21 10 0 ...	23 0 0
Cut Nails, 3 in. to 6 in.	15 0 0 ...	16 0 0

(Under 3 in. usual trade extras.)

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

COPPER.

	s. d.
Seamless Copper tubes (basis per lb.	0 9½
Strong sheet "	0 10
Thin "	0 11
Copper nails "	1 0
Copper wire "	0 11

PLUMBERS' BRASS WORK.
Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	11/-	17/-	29/-	36/-	63/- per doz.

BRASS SLEEVES.

1½ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES S.F.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

	1¼ in.	1½ in.	2 in.	3 in.
6 lbs. P. traps	33/-	41/-	56/-	101/- per doz.
8 lbs. S. traps	35/-	45/-	66/-	126/- "

TIN.—English Ingots, 1/8 per lb. SOLDER.—Plumber's 9d., Tinmen's 10d., Blowpipe 11d. per lb.

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS—(*contd*).

LEAD, &c.

(Delivered in London.)	£	s.	d.
LEAD—Sheet, English, 4 lb. and up	22	0	0
Pipe in coils	22	10	0
Soil pipe	25	10	0
Compo pipe	26	0	0

NOTE.—Country delivery, 20s. per ton extra; lots under 3 cwt. 3s. per cwt. extra, and over 3 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes 5s. cwt. extra.

Old lead, ex London area, at Mills .....per ton } £12 0 0

PAINTS, &c.

		£	s.	d.
Raw Linseed Oil, in pipes	per gallon	0	1	9
,, ,, ,, in barrels ...	,, ...	0	1	11
,, ,, ,, in drums ...	,, ...	0	2	2
Boiled ,, ,, in barrels ...	,, ...	0	2	3
,, ,, ,, in drums ...	,, ...	0	2	5
Turpentine in barrels	,, ...	0	5	6
,, in drums (10 galls.)	,, ...	0	5	8
Genuine Ground English White Lead, per ton (In not less than 5-cwt. casks.)		47	0	0

Extra for 1-cwt. kegs over 5-cwt. casks is 5/9 cwt.

GENUINE WHITE LEAD PAINT.

"Father Thames." "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J" Brand, and other best brands (in 14-lb. tins) not less than 5-cwt. lots

	£	s.	d.
per ton delivered	65	0	0
Red Lead, Dry (packages extra) ... per ton	34	0	0
Best Linseed Oil Putty ..... per cwt.	0	13	6
Size. XD quality ..... fkn.	0	3	0

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per ft.		Per ft.
15 oz. fourths ...	2½d.	32 oz. fourths	7½d.
15 ,, thirds ...	3½d.	32 ,, thirds	9½d.
21 ,, fourths ...	3½d.	Obscured Sheet, 15 oz. ...	3½d.
21 ,, thirds ...	4½d.	,, ,, 21 oz. ...	4½d.
26 ,, fourths ...	4½d.	Fluted, 15 oz. 7d., 21 oz ...	9½d.
26 ,, thirds ...	7½d.	Em'lld, 15 oz. 4½d., 21 oz	6d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED plate in CRATES OF STOCK SIZES.

	Per ft.
Rolled plate ¼ in.	4½d.
Rough rolled $\frac{3}{16}$ in.	5½d.
Rough rolled ¼ in.	5½d.
Figured, Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish White	5½d.
Ditto, tinted	8d.
Rolled Sheet	4½d.
White Rolled Cathedral	4½d.
Tinted do.	6½d.

Cast plate is same price as rough rolled.

"VITA" GLASS.	Per foot. s.	d.
Clear sheet—not exceeding 1 foot	1	0
Do. do. 2 feet	1	3
Do. over 2 feet	1	9
Polished plate—not exceeding 1 foot	1	6
Do. not exceeding 2 feet	3	0
Cathedral—not exceeding 1 foot	1	0
Do. larger sizes	1	6
Horticultural Sheet and Cathedral "Vita" Glass. Sizes up to 24 inches by 18 inches or not exceeding 3 feet	1	0
3/16 in. Wired Georgian Design. Sizes up to 108 inches long by up to 24 inches wide	2	6

VARNISHES, &c.

		Per gallon £	s.	d.
Oak Varnish	Outside	0	14	0
Fine ditto	ditto	0	16	0
Fine Copal	ditto	0	18	0
Pale Copal	ditto	1	0	0
Pale Opal Carriage	ditto	1	4	0
Best ditto	ditto	1	12	0
Floor Varnish	Inside	0	18	0
Fine Pale Paper	ditto	0	18	0
Fine Copal Cabinet	ditto	1	2	0
Fine Copal Flatting	ditto	1	0	0
Hard Drying Oak	ditto	0	18	6
Fine Hard Drying Oak	ditto	0	19	6
Fine Copal Varnish	ditto	1	0	0
Pale ditto	ditto	1	12	6
Best ditto	ditto	1	2	6
Best Japan Gold Size		0	12	0
Best Black Japan		0	10	0
Oak and Mahogany Stain (water)		0	12	6
Brunswick Black		0	7	0
Berlin Black		0	14	0
Knotting (patent)		1	5	0
French and Brush Polish		0	17	0
Liquid Dryers in Terebene		0	9	0
Cuirass Black Enamel		0	7	0

Danish Contracts for British Firm.

Messrs. Williams and Williams, Ltd., of Chester, manufacturers of metal windows and doors, are able to report that as a direct result of their arranging to exhibit at the forthcoming British Exhibition in Copenhagen, which is due to be opened by H.R.H. the Prince of Wales on September 24, they have already received a number of contracts from Danish customers and have thus considerably increased the number of their employees.

TRADE NEWS

Acquisition of Timber Business.

Messrs. Joseph Sandell and Co., Ltd., have acquired the old-established timber business of Mr. W. J. Wilkins, 1a, Acklam-road, W.10. Mr. Murphy, who has been connected with the business for fifty-five years, will continue to act as manager, and all orders and inquiries should be sent to Acklam-road as before. A high-class and varied stock will be held.

A New Sign Showroom.

On and after September 29 the West-end showroom of Messrs. Nash and Hull, Ltd., will be moved from 87, New Oxford-street, to 22, High-street, Bloomsbury, W.C.2 (Tottenham Court-road Station). In the new showroom will be a representative display of letters of all types in bronze and cream enamel, "Staybrite" steel, lead-coated sheet steel, knife-edge and ribbon lettering, bronze and brass plates, and illuminated signs, including the new Rhodoid letters and Neon signs.

The New City Hall at Sheffield.

Special study has been devoted to the artificial lighting equipment in this building, illustrated last week. It was felt, after consideration, that the "shadowless" illumination, so much in vogue of recent years, produced a definite tendency, in so many people, towards somnolence, and after a while became very tedious. In the City Hall, therefore, standard methods of lighting have in many instances been departed from. The aim has been, throughout the building, to ensure sparkle, liveliness, glitter, reflection. The great hall, for example, is quite windowless, but it has what is understood to be the largest lay-light in existence, and this provides the whole of the illumination both by day and by night. Again, in the main entrance hall, the lighting is worthy of special note. The illumination of the delightful heraldic work has been adequately provided for by means of a series of wall-boxes, formed of the new blue mirror-glass. The main lighting in the semi-circular hall is entirely concealed in a trough installed in front of the balcony, where reflector equipment is located. In this hall also an interesting form of opalescent tube has been introduced between the windows, and reflectors concealed behind the canopy provide intense illumination for the platform. In the provision made for the floodlighting of the exterior by night, the engineers have aimed at emphasising the architectural features of the building and the beauty of the natural outlines, rather than providing brilliantly illuminated surfaces, presenting to observers a flat and uninteresting façade.

The question of acoustics, as was natural in the case of such a large building, called for special investigation. The engineers have aided the architect, Mr. Vincent Harris, by a complete system of microphones and loud-speakers. The design and the supply of the material for the elaborate electrical installation were in the hands of Messrs. Griersons, Ltd., of London. The labour was provided by the Electricity Department of the City of Sheffield, Mr. Ernest Morgan, M.I.E.E., being the City Electrical Engineer.

In our article last week we omitted to mention that Messrs. May Acoustics, Ltd., were responsible for the acoustic work in the halls, under the direction of the architect, Mr. E. Vincent Harris. The walls in the concert hall, memorial hall, and the two halls in the basement, above the panelling, are finished in "Maycoustic" stone cast to various radii. The stone is in four slightly varying shades of buff.

NEW BUILDINGS IN SCOTLAND

Aberdeen. — BUILDING. — The Plans and Town Planning Committee of Aberdeen Town Council has passed plans for 229 houses, at an estimated cost of £138,500. These include the large building scheme at Back Hilton-road, Hilton-avenue and Hilton-drive, projected by Messrs. Bisset and Sons. Other plans include 36 houses in Cairncry-road, 14 in Newlands-crescent, and nine in Hardgate, near Ruthrieston Station. Plans for 13 other buildings and alterations to buildings, at an estimated cost of £2,107, were also passed.

Glasgow.—IMPROVEMENTS.—As part of the scheme of improvement of St. Enoch-square, Glasgow, which has been in progress for some time as an undertaking of the Statute Labour Department of the city, the Corporation are to erect a new building in place of premises which were demolished at the east side of the Argyle-street entrance to the Square. In rebuilding on the site the local authority are carrying back the line of the walls to correspond to the width of Buchanan-street, which confronts the St. Enoch-square entrance on the other side of Argyle-street. The new premises, like the old, will consist of warehouse and shops accommodation. The building projected is to be five stories in height. Other linings granted by the Court included :—Bank of Scotland—alterations and reconstruct premises at 20, Kildrostan-street; Eastpark Home for Infirm Children, 1092, Maryhill-road—alterations and reconstructions at the Home; Carntyne Social and Recreation Club—clubhouse, Carntyne-road; Ioco Football Club—pavilion at Netherton Works, Anniesland.

Hawick.—HOUSING.—At a meeting of Hawick Town Council it was resolved to proceed with a further housing scheme in the Wellogate district. Plans were passed for the erection of six semi-detached villas for Messrs. A. Scott and Son at Leaburn, in the Weensland district.

Loanhead.—EXTENSIONS.—The Midlothian C.C. are to extend the public school. The plans are by the County Architect, 9, Drumsheugh-gardens, Edinburgh.

BUILDING TRADE WAGES IN SCOTLAND*

Following are grade rates authorised by the Scottish N.J.C. for Building Industry. The bricklayers in the Glasgow district have ½d. per hour extra. It should be noted that plasterers and painters who are not parties to the Scottish N.J.C. pay higher wages of 1d. and ½d. per hour extra respectively. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classifications ...	A	A¹	A²	A³	B	B¹	B²	B³
Craftsmen	1/6½	1/6	1/5½	1/5	1/4½	1/4	1/3½	1/3
Labourers	1/2	1/1½	1/1¼	1/0¾	1/0½	1/–	/11¾	/11½

Aberdeen	A	Dundee	A	Hawick	A³	Perth	A
Airdrie	A	Dunfermline	A	Helensburgh	A	Perthshire	A
Alexandria	A	Dunoon	A	Inverness	B	Peterhead	A³
Arbroath	A²	East Lothian	A	Kilmarnock	A	Renfrewshire	A
Ayrshire	A	Edinburgh	A	Kincardineshire	A³	Rothesay	A
Bathgate	A	Falkirk	A	Kinross-shire	A	Roxburghshire	A³
Bo'ness	A	Forfarshire	A²	Kirkcaldy	A	St. Andrews	A
Broughty Ferry	A	Fort William	A	Lanarkshire	A	Selkirkshire	A
Clackmannanshire	A	Galashiels	A²	Leith	A	Stirling	A
Coatbridge	A	Glasgow	A	Midlothian	A	Stirlingshire, West	A³
Dumbartonshire	A	Greenock	A	Motherwell	A	West Lothian	A
Dumfries	A²	Hamilton	A	Peebleshire	A²	Wishaw	A
Dumfriesshire	A²						

* The information given in this table is copyright. The rates of wages in various towns in England and Wales are given on page 479.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	9	9
Add if in clay	„ „	1	0
Add for every additional depth of 6 ft.	„ „	0	6
Planking and strutting to trenches	per foot super	0	4
Do. to sides of excavation, including shoring	„ „	1	0

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	27	0
Add if in underpinning in short lengths	„ „	6	0
Add if in floors 6 in. thick	„ „	2	6
Add if in beams	„ „	3	0
Add if aggregate 1 : 2 : 4	„ „	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	„ „	2	0

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	30	0	0
Add if in stocks	„	7	10	0
Add if in Staffordshire blues	„	22	0	0
Add if in Portland cement and sand	„	1	5	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1¼

POINTING.

Neat flat struck or weathered joint	„ „	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—

Fair external in half brick rings	„ „	0	0	10
Axed in stocks	„ „	0	0	9
Rubbed and gauged jointed in putty camber or segmental	„ „	0	6	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	„ „	0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks		4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	„ „	9	6
Three-quarter-inch on flats in two thicknesses	„ „	6	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	„ „	1	0

MASON.

York stone templates fixed	per foot cube	13	0
York stone sills fixed	„ „	22	0
Bath stone and all labour fixed	„ „	10	6
Beer stone and all labour fixed	„ „	15	0
Portland stone fixed	„ „	20	0
Chilmark stone fixed complete	„ „	17	6

SLATER.

Welsh 16in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20in. × 10 in. Do. Do.	„	80	9
Do. 24in. × 12in. Do. Do.	„	90	0

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	4	3
Do. joists	„ „	4	9
Do. roofs, floors and partitions	„ „	5	3
Do. trusses	„ „	7	9

		¾″	1″	1¼″	2″
Deal rough close boarding	per sq.	33/6	38/–	43/–	70/–

Flat centering for concrete floor, including struts or hangers	„	50	0	
Do. to beams	per ft. sup.	0	9	
Centre for arches	„	1	6	
Gutter boards and bearers	„	1	0	

FLOORING.		¾″	1″	1¼″	1½″
Deal-edges shot	per sq.	—	42/6	50/–	57/6
Do. tongued and grooved	„	—	47/–	56/–	64/–
Do. matchings	„	44/–	49/–	—	—
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/–	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	„ „	2	1
Add for fitting and fixing	„ „	0	3
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights; average size		3	9

DOORS.		1½″	1¾″	2″
Two-panel square framed	per ft. sup.	2/1	2/3	2/5
Four-panel Do.	„	2/4	2/6	2/9
Two-panel moulded both sides	„	2/6	2/9	2/11
Four-panel Do. Do.	„	2/9	2/11	3/2

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1″	1¼″	1½″
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers	„	1/4	1/6	1/9
Add if cross-tongued	„	2d.	2d.	2d.

STAIRCASES.

	1″	1¼″	1½″	2″	2½″
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/–	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. x 1¼ in	per ft. run	0	9
Mahogany handrail, average, 3 in. x 3 in.	„ „	6	0
Add if ramped	„ „	12	0
Add if wreathed	„ „	24	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/–
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/–
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	15	3
Plain compound girders	„	18	0
Do. stanchions	„	20	9
In roofwork	„	26	6

RAIN-WATER GOODS.

		3″	4″	5″	6″
Half-round plain rebated joints	ft. run	1/4	1/7	1/9	2/–
Ogee Do. Do.	„	1/6	1/9	2/3	2/9
Rain-water pipes with ears	„	1/6	2/4	—	—
Extra for shoes and bends	each	3/4	4/11	—	—
Do. stopped ends	„	1/6	1/10	2/9	3/3
Do. nozzles for inlets	„	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	40	0
Do. Do. flats	„	39	0
Extra labour and solder in coated cesspools	each	6	9
Welt joint	per ft. run	0	6
Soldered seam	„ „	1	3
Copper nailing	„ „	0	3

	½″	¾″	1″	1½″	2″	4″
Drawn lead waste per ft. run	1/1	1/7	1/10	3/–	3/6	—
Do. service „	1/6	2/–	2/5	3/6	—	—
Do. soil „	—	—	—	—	—	6/–
Bends in lead pipe each	—	—	—	—	3/–	6/6
Soldered stop ends „	1/–	1/4	1/9	2/6	3/2	—
Red lead joints „	11d.	1/–	1/3	1/11	2/4	4/10
Wiped soldered joints „	2/6	3/–	3/6	4/4	5/6	7/9
Lead traps and cleaning screws „	—	—	—	12/7	17/6	—
Bib cocks and joints „	6/4	9/7	15/4	41/–	—	—
Stop cocks and joints „	15/4	17/2	25/8	64/–	—	—

PLASTERER.

			s.	d.
Render, float and set in lime and hair	per yard sup.		2	3
Do. Do. Sirapite	„ „		2	6
Do. Do. Keen's	„ „		3	6
Add saw lathing	„ „		1	7
Add metal lathing	„ „		2	6
(Not including hangers or runners, etc., for suspended ceilings.)				
Portland cement screed	„ „		2	2
Do. plain face	„ „		3	3
Mouldings in plaster	per 1 girth		0	1
One-and-a-half granolithic pavings	per yard sup.		5	3½

GLAZIER.

21-oz. sheet plain	per foot sup.	0	7½
26-oz. Do.	„ „	0	10
Obscured sheet	„ „	1	1
⅛-in. rolled plate	„ „	0	9
¼-in. rough rolled or cast plate	„ „	0	10
¼-in. wired cast plate	„ „	1	3

PAINTER.

Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	„ „	0	7
Plain painting, 1 coat	„ „	0	9
Do. 2 coats	„ „	1	2
Do. 3 coats	„ „	1	9
Do. 4 coats	„ „	2	4
Graining	„ „	2	3
Varnishing twice	„ „	1	9
Sizing	„ „	0	3
Flatting	„ „	0	7
Enamel	„ „	1	1
Wax polishing	per foot sup.	0	6
French polishing	„ „	1	2
Preparing for and hanging paper	per piece, 2/– to 4/–		

*These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Act, and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modifications.*
¶ Denotes *accepted by H.M. Office of Works and H.M. War Office.*

Alnwick.—Installation of electric light in 50 houses under course of construction on the Clayport housing estate, for the U.D.C.:—
*Parker, Ltd., Pilgrim-street, Newcastle-on-Tyne £225

Altrincham.—78 houses in Princess-street, Sinderland estate, for the U.D.C. Mr. H. E. Brown, surveyor:—
*Leyland Construction Co., Ltd., Leyland, near Preston.

Belfast. Alterations to the Metropole Hotel, York-street. Mr. T. D. Purdy, architect, 10, Donegall-square East:—
*E. Fraser, 58, Alexandra-street, Belfast.

Birmingham.—Club headquarters in Balsall Heath-road, Edgbaston, for the Building Committee of the Conservative Association. Mr. J. E. Abrams, architect, 19, St. Agnew-road, Moseley:—
*W. Wilkinson, Birmingham.

Birmingham.—Alterations to premises at the corner of Temple-street and New-street:—
*J. Curtis & Son, York-road, Leeds.

Birmingham.—Shops, offices and reconstructing stonework at 239, Broad-street. Mr. Bernard G. Warr, A.R.I.B.A., architect, Solihull:—
Builders—*John Bowen & Sons, Ltd., Balsall Heath, Birmingham.
"Guildstone" stonework — *Allied Arts & Crafts Guild, Ltd., Birmingham.

Blackburn.—Extensions, etc., to the Brockhall Institution, Langho, for the Committee for Mental Defectives, Calderstones, Whalley. Messrs. Rees and Holt, FF.R.I.B.A., architects, 64, Rodney-street, Liverpool:—
Carpenter—*W. Beetham.
Plumber—*C. W. Mallott (Preston), Ltd.
Plasterer—*Brown & Bennett.
Ironfounders—*T. Blackburn & Son, Ltd.
(All of Preston.)

Blyth.—50 houses at Bebside, for the T.C. Mr. L. Leeper, Borough Engineer:—
*Direct Labour £8,000

Bolton.—38 houses in Burnham-avenue, for Messrs. A. T. Reynolds & Co., Lostock Park-parade:—
*T. P. Smith, Bolton.

Brandon.—Conversion of 61 dwelling houses to the water carriage system, for the U.D.C. Surveyor, 6, Goat Beck-terrace:—
Per house.
*J. Ellison, Meadowfield, Co. Durham £7 18 6

Bristol.—Ten houses on the Dings area clearance, for the T.C.:—
‡E. A. W. Poole & Son £3,160

Buckie.—Reconstruction of the property at Blantyre-terrace, for the T.C.:—
Mason—*R. Riddoch.
Carpenter—*A. Hendry & Sons.
Slater—*Simon Fraser, Keith.
Plumber—*J. Barclay & Son.
Plasterer—*George Packman.
Painter—*R. Johnston.

Chippenham.—For redecorating Council houses at (*a*) Lacock, and (*b*) Kingston Langley, for the R.D.C.:—
(*a*)*E. Edwards £101 0
(*b*)*Gowen & Stevens 64 4

Cleckheaton.—Alterations and additions to the banking premises in Bradford-road, for the National Provincial Bank, Ltd. Mr. F. C. R. Palmer, architect, Bishopsgate, E.C.2:—
*Wm. Scott & Sons.

Clutton.—12 non-parlour type houses at Clutton and eight at Farmborough, for the R.D.C. Messrs. Thomas & Morgan & Partners, architects, Pontypridd:—
Clutton—
*E. Robbins & Son, Clutton £3,744 10
Farmborough—
*G. H. Porter, Horfield, Bristol 2,450 0

Colwyn Bay.—Alterations and additions to the Wesleyan Church, Old Colwyn, for the Wesleyan Circuit Trustees:—
*D. E. Evans, Colwyn Bay.

Cranbrook.—Houses, for the R.D.C. Mr. E. H. Gandy, architect:—
Cranbrook, 18 houses—
*Horace Newby, Ramsgate ..... £315 each
Goudhurst, 2 houses—
*Horace Newby, Ramsgate ..... £302 each
Sissington, 6 houses—
*Lewis Thorpe, Southborough ..... £309 each

London.—Internal redecoration of 64 houses on the Lewisham Park estate, for the Lewisham B.C.:—

	17 houses Romborough-gardens.	17 houses Romborough-way.	30 houses Campshill-road.
R. Cabell	£422 15 6	£361 11 0	£681 2 0
Walker, Clinging & Co.	528 19 3	351 19 0	604 18 6
A. T. Peyton	355 19 6	331 2 6	591 17 6
Burke, Collins & Co., Ltd.	336 17 9	314 9 6	561 8 0
R. A. Blake & Son	308 7 6	289 15 0	503 2 6
A. Black & Son	234 4 0	241 17 0	424 5 0
E. C. Christmas	227 5 9	221 18 9	364 13 9
J. Dennett & Co.	293 7 4	290 11 8	346 13 0
*H. Piper & Sons	178 7 4	186 11 3	309 13 11

Dalton-in-Furness.—Alterations to premises at Market-street, for Messrs. Kearley & Tonge, Ltd., Aldgate, London, E.1:—
*Capstick & Co., Liverpool.

Edinburgh.—Blocks of shops and suite of offices at Leith-walk. Mr. Gildard White, architect, Merchieston-avenue:—
*J. McLaughlan, Ltd., Edinburgh.

Exeter.—New college hostel in Pennsylvania-road, for the Council of the University College of the South-West of England. Mr. E. Vincent Harris, architect, St. James's-square, London, S.W.1:—
*William T. Nicholls, Ltd., St. Paul's-road, Gloucester.

Fenit.—New piling and other repairs at Fenit Viaduct, for the Tralee Harbour Board:—
*Buttimer £2,449

Gateshead-on-Tyne.—Bus shelter and cloakrooms at the corner of Church-street, near the Tyne Bridge, for the T.C. Mr. F. H. Patterson, Borough Engineer:—
*C. B. Smith, Eighton Banks, Low Fell £3,760

Glasgow.—Extensions to St. Patrick's boys' school, for the T.C. Mr. William McCaig, architect, 129, Bath-street:—
*Cavieson, Ltd., Charles-street, St. Rollox, Glasgow.

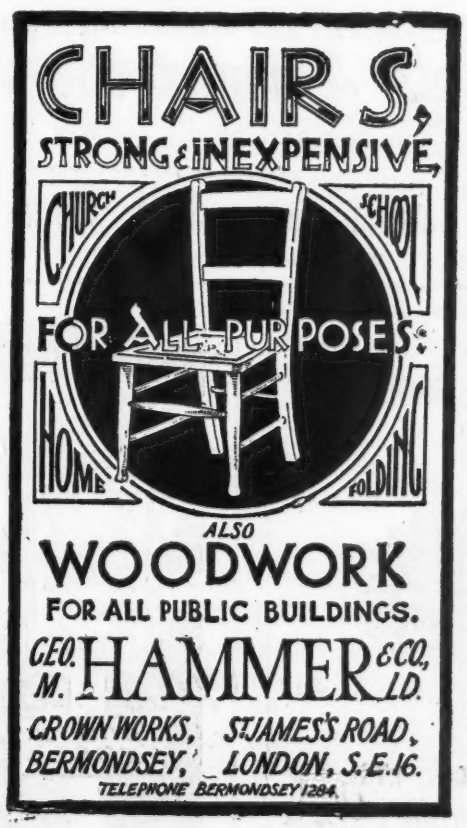
Glasgow.—New drill hall at Hamilton-crescent school, for the T.C. Mr. William McCaig, architect, 129, Bath-street:—
*J. & C. Fleming, 25, Waterside-street, Strathavon.

Glasgow.—Reconstruction and additions at 154, Trongate, for the Progress Investment Trust, Ltd., Hutchieson-street. Messrs. James Wilson & Honeyman, architects, 92, Bath-street:—
Main contractors—*R. Gilchrist & Sons, Ltd., New-street, Calton, Glasgow.
Lift installation—*A. & P. Stevens, 184, St. James'-road, Glasgow.

Greenock.—Reconstruction of the poorhouse and hospital. Mr. Robert Miller, Burgh Architect:—
Plumber work—*J. Austin, Sugar House-lane, Greenock.

Halifax.—Branch premises for Messrs. Marks & Spencer, Ltd. Mr. William Hall, L.R.I.B.A., architect, 10, Commercial-street:—
*Bovis, Ltd., 35, High-street, London, W.1.

Hamilton.—Unclimbable fence near Woodburn primary school:—
*Matthew Cullen, Waverley, Auchin Campbell-road, Hamilton.



Hanley.—Twelve houses on Lane Head-hill site, for the U.D.C. Mr. P. N. Brown, L.R.I.B.A., architect, Hollowgate, Holmfirth.
Contractors—*A Hirst & Co., Hanley.
Joiners—*Garlick Bros., Meltham.
Slaters—*W. Smith & Son, Milnsbridge.
Plumbers—*J. W. Maddison & Son, Hanley.
Plasterers—*Oldfield Bros., Hanley.
Painters—*J. Quarmby & Son, Holmfirth.
Electrician—*J. W. Maddison & Son, Hanley.
Road constructor—*R. Turner & Co., Holmfirth.

Haslingden.—Improvements to schools, for Parochial Council of Parish Church. Mr. Fred Thorpe, F.R.I.B.A., architect, Union Bank-chambers, Priory-street, Oldham:—
*Exors. of Thos. Collinge, Haslingden.

Hebburn-on-Tyne.—Alterations to premises at Hebburn, for the Jarrow and Hebburn Co-operative Society. Mr. G. C. Young, architect, Grange-road West, Jarrow:—
*D. Glen, Back Queen's-road, Jarrow.

Hinckley.—Additions to a factory at Barwell, for Messrs. George Ward (Barwell), Ltd. Mr. E. J. Williams, architect, New-street, Leicester:—
*Archer, Son & Lockley, Hinckley.

Hull.—Paving works at back road at the rear of Nos. 125-145, Southcoates-lane, and adjoining Nos. 121, 123, 125, Southcoates-lane; also back road at the rear of Nos. 30-78, Savery-st., and Nos. 25-45, and 49-71, Watt-street, for the T.C. Mr. Herbert Hamer, City Engineer:—
*H. Webster & Son, 97, Witham, Hull £455 11 7

Leeds.—Alterations and additions to the "Cock and Bottle" Hotel at the Headrows, for Mr. G. Sanderson. Mr. G. W. Atkinson, architect, St. John's House, Merrion-street:—
*W. T. Pearson, Ltd.

¶London.—Tenders accepted by H.M.O.W. for the week ended September 9:—
Cambridge Head Post Office—erection—A. Roberts & Co., Ltd., 74, Earl's Court-road, W.8.
New Milton Post Office—erection—Chapman, Lowry & Puttick, Ltd., Crossways-road, Grayshott, Hindhead.
Peterborough Telephone Exchange — erection — E. Harris & Son, Cope-street, Coventry.
Barnard Castle Post Office—alterations—J. S Earnshaw, Ltd., Castlegate, Stockton-on-Tees.
Burton-on-Trent—maintenance work—A. Holmes & Sons, Ltd., Dallon-bridge, Burton.
Redhill—maintenance work—G. Martin, 1, Fengates-road, Redhill.
Birmingham Midland Telephone Exchange—painting—J. E. Harper & Son, Ltd., 72, Lombard-street, Birmingham.

¶London.—Tenders accepted by H.M. Air Ministry for the week ended September 3:—
Sutton Bridge—aeroplane shed—Wright, Anderson & Co., Ltd., Gateshead-on-Tyne.
Upavon—airmen's married quarters—W. E. Chivers & Sons, Ltd., Estcourt-street, Devizes.

London.—Painting various properties, for the Lewisham B.C.:—
*A. Black & Son £134 8

Marlborough.—16 new houses in Station-road, for the T.C.:—
*J. C. Norman, Swindon £4,865

Middlestown.—Fencing at the Council houses, for the R.D.C.:—
*Earnshaw Bros.

Muirkirk.—New pithead baths. Mr. J. Dempster, architect, Miners' Welfare Association, Westminster, London, S.W.1:—
*Angus, McDougall & Co., Davaar-street, Glasgow.

Nairn.—26 three-apartment houses at Forres-road site; also 2,200 yds. of tar macadam roadway, kerb and footpath; approximately 200 lin. yds. 8 in. fireclay sewer; approximately 200 lin. yds. 4 in. and 3 in. C.I. water pipe, and other relative works, for the T.C. Mr. J. H. G. Peter, Burgh Surveyor:—
Mason—*A. A. MacGillivray, Nairn.
Carpenter—*A. Cruickshank, Nairn.
Plumber—*R. R. Cumming, Nairn.
Slaters—*J. & J. M. Chapman, Nairn.
Plaster—*R. Glass, Lochabers.
Painter—*A. Macdonald, Forres.
Water main—*Wm. Roxburgh, Nairn.
Sewer—*A. Falconer & Sons, Elgin

Newcastle-on-Tyne.—Construction of roads and sewers on the Ferguson-lane housing estate, for the T.C.:—
*City Engineer £30,177

Newport (Northants).—Houses at Little Brickhill, for the R.D.C.:—

*J. C. Tarry £2,358

North Shields.—12 semi-detached houses in Hawkey's-lane, 6 houses in Cleveland-road and 20 houses in Milton-terrace, North Shields. Mr. W. Stockdale, F.R.I.B.A., 73, Howard-street:—

*W. Bower, Stephenson-street, North Shields.

Norwich.—Licensed premises at corner of Catton Grove-road, for Messrs. Stewart & Pattison, Ltd., Pockthorpe Brewery. Mr. W. A. Trollope, resident architect:—

*F. R. Hipperson, Ltd., Norwich.

Pontefract.—One hundred houses, for the T.C.:—

Brickwork—
‡F. Clough, Tingley £13,444 0 0
Joiners—
‡F. Clough, Tingley 6,500 0 0
Tiler—
‡J. Hardgrave, York 1,700 8 2
Plumber—
‡E. Atkin, Glasshoughton 3,079 1 0
Plasterers—
‡F. Beighton & Sons, Castleford... 2,115 9 8
Painters—
‡Glendenning & Hiles, Glasshoughton 542 14 0

Sheffield.—Additional storey to existing business premises on The Moor, for Messrs. Roberts Bros. Mr. F. Ratcliffe, A.R.I.B.A., architect, 12, Paradise-square:—

*W. G. Robson, Sheffield.

Preswick.—New Catholic Church at St. Quivox-road and Buja-street. Mr. James Carrick, architect, Wellington-square, Ayr:—

Excavation, brick and mason—*W. Paton & Son, Kyle-street, Ayr.
Plaster—*Jas. Leggat & Sons, 11, Nelson-street, Ayr.
Plumber—*MacIlraith, Cowan & Co., Newmarket-street, Ayr.
Electricity installation — *Yuille & Co., Portland-street, Kilmarnock.
Joinery, carpentry and ironmongery — *W. Govan & Sons, Main-street, Preswick.
Painter—*Johnstone & Co., Cathcart-street, Ayr.
Slater—*A. Ballantyne, River-terrace, Ayr.

Sheffield.—Structural steelwork for business premises at the corner of Bennett-street and The Moor. Mr. H. Webster, architect, St. Marie's Chase, Norfolk-street:—

*C. Ross, Ltd., Sheffield.

South Shields.—Converting Horsley Hill football ground into a greyhound racing track. Messrs. Oliver & Roberts, architects, 6, Broad Street-place, London, E.C.2:—

*E. C. Pether, Colnbrook.

Stretford.—Installation of terrazzo staircase and landing and marble stuc wall finishes at the town hall, for the U.D.C.:—

*Christie Stone Co., Manchester ... £806 9 10

Stretford.—Electric lighting, etc., at the town hall, for the U.D.C.:—

*B. Thomas £3,525 17

Stretford.—Installation of sanitary fittings at the town hall, for the U.D.C.:—

*Morrison, Ingram & Co., Ltd. ... £399 9 7

Stretford.—Supply and fitting of fibrous plaster on cornice beams, etc., to committee rooms and members' rooms, model centre feature in committee room, columns, pilasters, etc., to council chamber, and general work on the ground floor and first floor at the town hall, for the U.D.C.:—

*James Glynn, Oldham £1,394 10

Stretford.—Heating and ventilation installation at the town hall, for the U.D.C.:—

*Saunders & Taylor, Ltd. £4,906

Teignmouth.—36 non-parlour type houses, for the U.D.C.:—

*Torquay Building Co. ..... per house £327

Tyldesley.—New schools for the Parochial Council of St. George's Church. Mr. Fred Thorpe, F.R.I.B.A., architect, Union Bank-chambers, Priory-street, Oldham:—

*R. & W. Gregson, Tyldesley.

Uttoxeter.—12 houses in various parts of the district, for the R.D.C.:—

*E. Morley & Sons, Derby ... per house £320

Wells.—Ten houses on the Gas Works estate, for the U.D.C.:—

‡R. Claxton £2,921 10 4
H. Mack 2,876 0 0
Purdy & Son ..... (withdrawn) 2,559 12 0

West Kesteven.—8 houses at Barrowby, for the R.D.C.:—

*Read Bros., Grantham £2,095 5 10

Widnes.—138 houses on the Lockett-road and Alder-avenue sites, for the T.C.:—

‡Daniel Cooper, Warrington.

York.—Electricity sub-station at Beckfield-lane, for the T.C. Mr. F. C. Spurr, City Surveyor:—

†T. Belt, York £232

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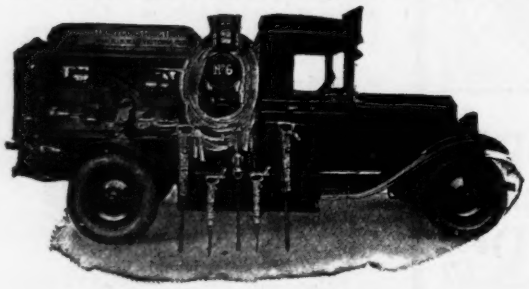
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